

GOETHE'S VISION OF *NATUR* DURING THE ITALIAN JOURNEY

A Thesis

by

JOHN PAUL EWING

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

December 2009

Major Subject: Comparative Literature and Culture

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## ABSTRACT

Goethe's Vision of *Natur* during the Italian Journey. (December 2009)

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The following project will examine the scientific, metaphysical, and aesthetic themes connected to Goethe's vision of *Natur* during and surrounding the years of his famed Italian Journey. Goethe's progressing conceptualization of the *Urpflanze* during this period, as witnessed in his autobiographical *Italienische Reise* and the »*Versuch, die Metamorphose der Pflanzen zu erklären*«, will be of special concern because of its pertinence to a number of vital natural scientific themes in Goethe's scientific work. I will also trace the progression of these themes over time as seen in Goethe's related theories of the intermaxillary bone and of the morphology of plant organs so as to maintain that the Italian Journey may be seen as a period not only of literary revitalization as commonly cited, but also of scientific progress in connection with Goethe's deepening understanding of *Natur* as well as its inherent laws and archetypal nature.

The first chapter will introduce the project's problem in detail as well as the textual and critical obstructions associated with the project. I will maintain in Chapter II that Goethe's biography during the 1780s shows a systematic progression in the understanding of *Natur* in his scientific projects and in the *Reise*, which also helps to

demonstrate that Goethe's Journey was a period during which Goethe was able to develop, in greater detail than heretofore, his metaphysical vision of *Natur*. In Chapter III, I will investigate the primary textual material on Goethe's notion of the *Urpflanze* within the *Italienische Reise* and its resulting extension in his 1790 study of plant morphology, the *Metamorphose der Pflanzen*. Chapter IV will discuss the topic of the *Eins* in Nature and *anschauende Urteilskraft* as detected in Goethe's scientific writings. Chapter V will continue and conclude this argument by linking Richards' argument regarding "Romantic biologists" to Goethe's natural science during the time of the Italian Journey, thus making a connection between *Kunst* and *Natur* in the *Italienische Reise* and in Goethe's scientific projects during and surrounding the Journey.

## DEDICATION

To my mother and father

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# CHAPTER I

## INTRODUCTION: EPISTEMOLOGICAL MATTERS AND CRITICISM

Without difficulty, one may view Goethe's autobiographical *Italienische Reise*, at least in part, as a record of the poet's literary revitalization which took place during his travels in Italy between September of 1786 and May of 1788—often referred to as his „*Wiedergeburt in Italien*“ or “Italian rebirth.” Goethe's comment in the *Italienische Reise*, „*In Rom hab' ich mich selbst zuerst gefunden, ich bin zuerst überstimmend mit mir selbst glücklich und vernünftig geworden*“, certainly seems to support this conclusion (*IR* March 14, 1788). Moreover, just days after writing about the impact that his stay in Rome had upon him, Goethe writes the following to Duke Karl August, not long before his return from Italy to his resident town of Weimar: „*Ich darf wohl sagen: ich habe mich in dieser anderthalbjährigen Einsamkeit selbst wiedergefunden; aber als was? – Als Künstler!*“ (March 17-18, 1788). There is no question that the Journey, at least by the time of the second stay in Rome when Goethe made this comment, was an artistic rebirth as is commonly understood; while this view is by no means without merit given the above quotes to that effect and the reality that Goethe's writing style clearly underwent significant changes during this time, it fails to emphasize the impact of the journey upon Goethe's ongoing scientific and natural themes, as well as the record of said themes in the *Reise*. I will maintain that Goethe's scientific progress during this

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This thesis follows the style of the *MLA Handbook, Seventh Edition*.



time is less a matter of rebirth or „*Wiedergeburt*“ than of Goethe finding himself intellectually and realizing himself as a thinker in the sense that his ideas regarding Nature during this time became more concrete and applicable to his scientific projects. While it is clear that Goethe considered himself a reinvigorated artist and poet by the conclusion of his travels in Italy, lending much verity to the aforementioned reading of the *Italienische Reise*, this work is also a thorough record of Goethe’s natural scientific musings during this time, which helps to identify his abiding philosophical concerns in his subsequent scientific writings and in his thought in general—but especially in regard to plant morphology. The tasks of the current project are, firstly, to identify the abiding natural scientific progressions and premises throughout both the *Italienische Reise* as well as Goethe’s scientific projects during the time of the Journey and, subsequently, to come to an understanding of the significance of this work and its themes, as well as the period of time that it records, to Goethe’s natural scientific project at large. Familiarity with the theoretical consequences of Goethe’s scientific work during this time is crucial to an understanding of Goethe’s ultimate vision of *Natur* throughout his corpus.

### **Epistemological and Textual Complications Presented by the *Italienische Reise***

The *Italienische Reise* presents a number of textual difficulties which, though they are by no means insurmountable, must be briefly addressed in order to validate the use of this work to identify the thematic muse behind Goethe’s scientific projects. The majority of the *Italienische Reise* was compiled and published starting in 1816, approximately thirty years after Goethe’s initial departure from Karlsbad. The work

consists mainly of selections and edited portions of Goethe's daily journals and his correspondence with such figures as Herder, Frau von Stein and Duke Karl August, but it also includes his own recollections of events which he recorded years after the fact, as he found himself "faced with a shortage of source material" upon compilation of the work. As Boyle points out, readers of the *Reise* must take Goethe's word with a grain of salt because of this (Boyle 467). Gretchen Hachmeister argues as well that the chronologically mixed constitution of the *Italienische Reise* creates several problems for the piece both as an autobiographical document and as a *Reisebericht* ("travel report"), not to mention the manuscript as a whole (19). That is, due to Goethe's significant editing of the original source materials and his reports and summaries of letters and journal entries, especially in the third section, the *Italienische Reise* can neither be treated as a traditional autobiography nor as a simple travel journal. Furthermore, Oswald situates the text of the *Italienische Reise* within the period it was finally compiled and published (1816-1829) by arguing that Goethe was not a predecessor to the Romantics in this work as he would have been during the journey itself, but rather an "anti-Romantic" who was responding to the movement as it was being articulated in the early 1800s (Oswald 104)—one can presume from this view, as Hachmeister does, that there is a chronological and ideological discrepancy in the document between Goethe the Traveler and Goethe the Autobiographer. However, the simple fact that much of the work was composed *ex post facto* does not preclude its usage as a historical document or an autobiographical account. Many if not most autobiographies concern themselves with events that took place decades beforehand, so one is only prevented from reading

the *Italienische Reise* as the authentic travel journal it seems to be at first glance; it is, in principle, still as *reliable* as one may expect from any autobiography or travel report, though perhaps not as *precise* as one might expect from an authentic travel journal.

In order to better understand the genre in which Goethe is writing, we need only turn to Charles Batten, a scholar of 18<sup>th</sup> century travel reports. Batten characterizes travel literature as a “kind of mimetic entertainment [...] often associated with narrative literature.” He continues, “the travel account joined pleasure with instruction in what became, perhaps, one of the most characteristic forms of the century” (Batten 8). In the era in which Goethe was writing his *Reisebericht*, this form of literature was, in a way, an early equivalent of the drugstore novel in that it was a kind of passive entertainment that assisted the reader in escaping from reality. Batten argues that a good piece of 18<sup>th</sup> century travel literature strives for a happy medium between instructive, formal discourse and entertaining personal accounts. That is, the work should teach while maintaining an autobiographical, narrative tone that a common audience can read effortlessly and with genuine interest (46). Although Batten’s study of travel literature is generally limited to British publications in the 18<sup>th</sup> century, the conventions that he outlines are easily detected in Goethe’s *Italienische Reise* and Batten’s general description of travel literature helps to articulate Goethe’s probable intentions in writing this piece. The work is meant to be read as a form of “edutainment” so to speak—it is easy to read and entertaining in terms of the autobiographical touch, yet educational in terms of its geological, sociological, and regional descriptions. Since the *Reise* is most likely meant for light reading, and Goethe’s apparent attempt to recreate a journal-like

format would corroborate this assumption (Boyle 467), the *Italienische Reise* does not have as its main goal an accurate or in-depth autobiography in the sense of attempting to track precisely the author's intellectual, emotional, or spiritual growth. Although it contains factual information about Goethe's life during this time and many of his intellectual musings may have actually occurred and been recorded on the day that Goethe claims, personal relationships and private thoughts and reflections are not the central focus of the piece; rather, the focal point is the description of the land, culture, and experiences Goethe records. This lack of introspective autobiographical material presents a challenge to one who would use this work in a project that attempts to account for the underlying themes and ideas present in Goethe's scientific writings during and shortly after this period, but this is not to say that the *Reise* does not offer indispensable correspondence and a plausible reference for tracking the periods in which Goethe was working on his sundry projects. It means only that these references to his projects do not often focus on the intellectual details or the development of his ideas and themes.

That said, it is again unclear as to where in the text Goethe is recalling his examinations of nature and plant morphology retrospectively and where he is recording them within hours or days of when they truly occurred. No matter the case, however, if the *Italienische Reise* is to be used at all as a glimpse into Goethe's mental life during the mid to late 1780s, the reader may trust—unless there is evidence to the contrary—that Goethe is recalling the essential substance of his musings accurately, even if they are retrospectively embellished or articulated more eloquently than would have been possible at the time of the actual Journey.

## Scholarly Characterization of the Journey

Goethe's life is more thoroughly documented than most thanks to his numerous autobiographical writings and his surviving journals and correspondence. Although the years of his Italian journey<sup>1</sup> are no exception to this rule, there exists an unfortunate lack of critical and analytical commentary on the significance of this period and the text of the *Italienische Reise* to Goethe's wider thematic and scientific project. It is understood in the criticism that Goethe's travels in Italy acted as his artistic *Wiedergeburt* ("rebirth") and a period of *Selbstbildung* ("self-education," usually in the sense of a long-lasting attempt to better oneself) after a decade of sparse literary production in Weimar as Borchmeyer (125) and Boyle (441) suggest<sup>2</sup>. I contend that the term *Wiedergeburt*, as used to describe the revitalization that Goethe underwent during his Journey, focuses mostly if not exclusively on the writer's artistic and poetic reinvigoration, disregarding the thematic and scientific turning point which came with the conclusions of his meticulous and extensive scientific work in Italy, as described in the text of the *Italienische Reise*. These scientific themes and conclusions will be identified throughout the course of this project. Meanwhile, a view of the journey as *Selbstbildung*, although it is sensitive to Goethe's active role in his Italian transformation, largely accentuates the artistic self-improvement of the journey while downplaying Goethe's pervading intellectual concerns featured in the *Italienische Reise* which began in the early 1780s

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<sup>1</sup> For the purposes of clarity, I will continue to use the English "Italian journey" to refer to Goethe's journey itself and the German „*Italienische Reise*“ to denote the autobiographical work based on that journey.

<sup>2</sup> A reading of the Italian journey as *Wiedergeburt* can be found throughout Boyle's biography, but Boyle does eventually recognize that Goethe questioned the effect that Rome might have had on this rebirth (445).

and merely persisted from past projects into the period of the Journey. Moreover, the common view of Goethe's Journey as *Wiedergeburt* or *Selbstbildung* privileges Goethe's poetry and dramas by tending toward a contextualization of Goethe's celebrated renunciation of romanticism in favor of Weimar classicism. While this reading retains great usefulness in Goethe studies as an easily cognizable dividing line of sorts between his early and middle literary periods, especially given that Goethe himself cites his new style of writing even during the Journey (*Goethes Werke* Band XI 157, 208), this position perhaps does not retain usefulness to an analytic inquiry of the significance of the *Italienische Reise* within the context of a historical development of Goethe's nature-related themes and ideas, nor his scientific endeavors.

Albert Meier characterizes the work as exemplifying a paradigm shift in the *Reisebericht* genre from an account of the acquisition of knowledge during one's travels, as seen in the early enlightenment period, to an account of the traveler's self-education and betterment (*Persönlichkeitsbildung*) during the romantic period (Meier 284-285). As such, Meier adheres to an argument resembling the previously mentioned *Selbstbildung* line of reasoning wherein Goethe's Italian journey is less of a "working through" or realization of a number of his abstract philosophical and scientific tendencies—namely those relating to his conception of *Natur*. Though Meier's thesis is certainly useful in understanding the relation of the *Italienische Reise* to other works of travel literature, it does not help to identify Goethe's specific thematic project during these years, which I will attempt to articulate in the following pages.

Hachmeister contends that there are three widely accepted interpretations of the journey which conclude that the period served as either an artistic hermitage from Goethe's highly public life in Weimar, a transformation from the "*Sturm und Drang* Goethe" to a Goethe who identified mostly with classical art, or a "recapitulation" of Goethe's past intellectual undertakings as well as the classical in art and literature. Hachmeister believes these interpretations are oversimplified and either ignore the dimension of personal growth that the journey represents or are otherwise dependent on an embellished notion of a transformed classical aesthetic. Regardless of how Goethe's aesthetic may have come into maturity, it is evident in Hachmeister's work that the usual views of Goethe's journey are too concerned with this idea of transformation (rather than the gradual development with which I am concerned in this project) and the literary context of the journey to be of use in this inquiry of the intellectual and natural concerns of the current project.

Taking cue from Hachmeister in this vein, I contend that Goethe's *Italienische Reise* may be seen in the natural scientific context not only as a record of an artist's rebirth or period of self-betterment, but also as a "sabbatical," so to speak, or a period during which Duke Karl August released Goethe from his public responsibilities, allowing him to travel and complete his undeveloped projects. During this time, Goethe explored, revisited, and expanded upon his intuitions of Unity and Archetype in Nature, two of the abiding themes of his previous scientific work, within the context of his studies of botany and plant morphology. Whereas the term „*Wiedergeburt*“ seems to suggest a breaking-off point from Goethe's previous manner of artistic thought as well

as an intellectual transformation, it may prove more productive in relation to the developing vision of *Natur* during this time to understand the Journey as an “actualization” or “realization” of his goal to discover the *Urpflanze* (“Primal Plant”) and subsequently to describe the Plant Archetype. Such an attempt at “actualizing” these goals would suggest process and development of already-extant themes and projects over time—namely in his work on Geology and Osteology—which was certainly the case in terms of Goethe’s endeavor to unravel the mystery of plant morphology and Archetype in Nature. However, these themes seem only to have come into full investigative and critical fruition in the years during and following the first Italian Journey. The *Italienische Reise* is a partial record of this intellectual development and coming-to-terms with Nature as a concept in a critical and applied manner.

### **The Goals of the Current Project**

Rather than attempting a purely aesthetic or literary account of the significance of the *Italienische Reise* or of the Journey itself, I believe an analysis of Goethe’s thoughts and beliefs related to his vision of *Natur* within the text of the *Italienische Reise* and in a number of his scientific essays from this time period (specifically, 1782-1790) proves useful to qualifying the impact of the Journey on Goethe both as an artist and as a scientist. Whereas the abovementioned scholars (from whom my inquiry receives its inspiration) often qualify the significance of the journey to Goethe by using the generalizing terminology such as *Wiedergeburt* and *Selbstbildung*, I will attempt to



call attention to the process of thematic development and intellectual *coming-to-be* in the *Reise* with regards to Goethe's *Naturphilosophie* in hopes of uncovering a methodology and a common root to Goethe's scientific projects during this period. Such an attempt will also shed light upon the text of the *Italienische Reise* in regard to Goethe's preoccupation with natural observation of the Italian environs. Goethe's journey to Italy acted as a setting for him to further realize his artistic and scientific ambitions by affording him the inspiration and solitude to apply his intuitive understanding of *Natur* to his intellectual projects. Goethe's transformation during his Italian Journey was largely, at least as concerns his science, a matter of exploring pre-existing interests and concerns in relation to *Natur*, e.g., organism archetype and intuitive insight accompanied by empirical evidence. The *Italienische Reise* was not representative simply of an aesthetic or intellectual rebirth; it was an intellectual realization of rudimentary thematic concerns such as *Natur* and *Urbild* ("archetype") which took root in the midst of Italy's natural surroundings and culture. Combined with the freedom from his responsibilities in Weimar which Goethe was allowed by Duke Karl August during this time, Goethe was able to accomplish in Italy the level of writing and scientific observation for which he had long been striving.

Goethe's almost obsessive search for the *Urpflanze* during this time and his related exploration of plant morphology are an example of how Goethe's science begins its inquiry with a basic metaphysical vision of the functions of nature—a fundamental concept which is explored in all its detail and complexity. I intend to demonstrate that Goethe's final theory of plant morphology is far more complex than the relatively

simplistic notion of the *Urpflanze* which he sought in the Botanical Gardens at Palermo because of his increasingly analytical understanding of *Natur* during the Journey.

Goethe's belief that Nature is a creative force which reveals its organization to us by archetypes in nature—which can be observed in the particular organism—is revealed both in his scientific writings and in the *Italienische Reise* and affected him as both a scientist and an artist. The manner in which Nature reveals herself changed in Goethe's mind during this time from direct representation in an idealistic embodiment of an archetype to archetypal rules of organization<sup>3</sup>. The *Reise*, then, may be used as a partial catalogue of Goethe's successes and failures in botany at this time which helps to demonstrate the man's vision of *Natur*.

This view of nature and Goethe's intuitive method of scientific inquiry will give us an insight into the text's place in Goethe's wider project and concerns. Although it is not the purpose of this project to identify a Goethean aesthetic in his poetry and drama—for to do so would require far more than a look at Goethe's understanding of *Natur*—Goethe is also concerned in the *Italienische Reise* (being a Romantic Biologist, as Richards terms it) with the relationship between *Kunst* and *Natur*, indicating that he had more on his mind than just the particular scientific projects in which he was engaged. These individual projects had a wider ranging significance for Goethe which is seen in a number of instances in the text of the *Italienische Reise*, particularly in connection with

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<sup>3</sup> Ebach defines the archetype as conceptualized by Goethe as “an experience of the unity that presents itself through multiple manifestations in organisms” (which Goethe thought could be embodied in an actual living plant until his opinions on the subject changed after his studies in Palermo) and a progression from less specialized to more specialized forms (258). These characterizations of the concept seem accurate and consistent with what one may abstract from Goethe's scientific work as well as his poems „*Metamorphose der Tiere*“ and „*Die Metamorphose der Pflanzen*.“ It will therefore be the presumed understanding of the term for the remainder of this project.

his interest in drawing. Goethe's thoughts on the relationship between Art and Nature are essential to an understanding of what motivated him as a scientist and as a thinker, especially during the time recorded in the *Italienische Reise*. Once I have extracted some of the fundamental themes and concerns of Goethe's natural scientific work, uncovering this relationship between *Kunst* and *Natur* as seen in the *Italienische Reise* will be the next, ultimate goal of this project.

I will maintain in Chapter II that Goethe's biography during the 1780s shows a systematic progression in the understanding of *Natur* in his scientific projects and in the *Reise*, which also helps to demonstrate that Goethe's Journey was not representative only of an artistic *Wiedergeburt*; it was also a period during which Goethe was able to develop, in greater detail than heretofore, his metaphysical vision of *Natur* which one may recognize in his botanical, geological and zoological studies as well as in some of his artistic endeavors. It is helpful to analyze the historical setting of Goethe's studies during the journey, particularly those conducted in the botanical gardens in Palermo which resulted in his *Metamorphose der Pflanzen* (1790), in order to intellectually situate his early scientific works in the context of his development as a thinker. That is, I will analyze the manner in which Goethe's thoughts on *Natur* came into being so that the conceptual foundation and the intentions of his later scientific studies will become clear, thus illuminating the numerous scientific musings within the *Italienische Reise* which influenced his scientific studies.

In Chapter III, I will investigate the primary textual material on Goethe's notion of the *Urpflanze* within the *Italienische Reise* and its resulting extension in his 1790

study of plant morphology, the *Versuch, die Metamorphose der Pflanzen zu erklären*. I will employ these texts in an effort to reconstruct the relationship between Goethe's archetypal understanding of the *Urpflanze* (both in principle and as supposedly embodied in actuality somewhere in nature, according to Goethe's initial presumption) and his later effort to explain the metamorphosis and morphological development of plants. This analysis of Goethe's botanical studies will be made in an effort, first, to qualify more thoroughly the travels in Italy as a period of scientific rejuvenation and innovation, as well as, more importantly, to elucidate the modification and advancement of Goethe's vision of *Natur* and his natural scientific aspirations during this period.

Chapter IV will discuss the topic of oneness in Nature as detected in Goethe's scientific writings as well as other essays and passages. I will then analyze Goethe's *anschauende Urteilskraft* concept as a means of making theoretical connections about natural phenomena and intuiting the existence of archetypes in Nature, thus proceeding to characterize Goethe as fitting into Richards' definition of the *Naturphilosophen*. Chapter V will continue and conclude this argument by linking Richards' argument regarding "Romantic biologists" to Goethe's natural science during the time of the Italian Journey, thus proceeding to make a connection between *Kunst* and *Natur* in the *Italienische Reise* and in Goethe's scientific projects surrounding the Journey. This will be done in hopes that such a connection will be useful to subsequent scholars of Goethe who would take it upon themselves to determine Goethe's use of the natural themes I discuss in Goethe's fiction, drama, and poetry.

## CHAPTER II

### THE FIRST ITALIAN JOURNEY AND THEMATIC DEVELOPMENT IN GOETHE'S EARLY SCIENTIFIC PROJECTS

Goethe's abiding concern with the artistic and scientific concept of *Natur* is quite clear in his work and thought—from the sensitive meditations on nature in his poetry to the philosophical musings found in his essays and scientific studies. In *The Romantic Conception of Life*, Robert J. Richards attempts to demonstrate the historical development of Goethe's view of Nature in connection with the feminine symbol of creative power, or what he calls the “Erotic Authority of Nature” (Richards 325). Citing Goethe's staunch belief in the “rights of nature” in the context of his discussions with Schiller about artistic Freedom, Richards demonstrates Goethe's overriding concern with the prominence of *Natur* in his thought (Richards 422). Rather than attempting to track the biographical development of Goethe's concept of *Natur* throughout Goethe's early life and his intellectual relationship with Schiller as Richards does, I will attempt to supplement Richards' argument by demonstrating the extent to which Goethe's preoccupation with the theme of *Urbild* in his early scientific work in Weimar and in the *Italienische Reise* shaped and motivated Goethe's botanical studies during his Italian Journey. In this chapter, I will characterize the scientific concerns of Goethe's *Italienische Reise* and his botanical studies at Palermo as a natural result of his developing thematic intuitions during his travels. I will do this in order to elaborate in the subsequent chapters on the thematic and intellectual tasks shared by much of

Goethe's scientific and theoretical work. I will then proceed in this chapter to relate some of the highlights of the *Reise* and the time leading up to the Journey through Italy in order to explain how Goethe's travels and his record of them in the *Italienische Reise* are geared largely toward developing his scientific interests and theories. This will be done in an ultimate effort to identify the significance of Goethe's intellectual tasks during the Journey in the subsequent chapters.

Rather than attempting to negotiate between the various views and qualifications of Goethe's journey, I will concentrate in this chapter on Goethe's recorded life prior to and during the Italian journey in relation to his science and his view of *Natur*—that is, the manner in which Goethe characterizes the natural universe as a creative, structured, life-giving force. The aspiration of the present chapter, then, is not to categorize or predicate Goethe's journey in order to elaborate upon the already established importance of the period, but rather to address some of the scientific and natural themes as they arise in Goethe's biography, thus illustrating the essentiality of Goethe's pre-Journey scientific convictions to his later scientific and intellectual ambitions—and to ascertain the role of Goethe's experiences in Italy towards helping those ambitions come into fruition. An account of this development of ideas in the *Italienische Reise* will help to reveal Goethe's scientific goals and methods and prepare for the task of shedding light upon the relationship between Goethe's science and his other intellectual and artistic projects. As a brief preface to this, I will proceed into an account of Goethe's growing concern with natural scientific endeavors prior to the Journey as well as Goethe's social and intrinsic motivations for the Journey.

### **The First Years in Weimar and Motives for the Italian Journey**

Before his first trip to Italy, Goethe went to live in Weimar in 1775 at the behest of Duke Karl August of Saxe-Weimar-Eisenach (who had become fascinated with the young author of *Die Leiden des jungen Werthers* while passing through Frankfurt in 1774) and his newlywed wife, Princess Luise. At the time of his arrival, Goethe was still at the height of his fame resulting from the publication of *Götz von Berlichingen* in 1773 and the wildly famous *Werther* in the following year. The relatively young author was able to complete a number of poems and minor dramas during this time and made significant progress in his scientific studies, but due to social, political, and professional obligations in Weimar, he could not focus on writing to the extent that he could in Frankfurt. During this period of relative literary inactivity, Goethe became a close confidant and advisor to Karl August and, at the further insistence of the duke, was asked to make his residence permanent by accepting the title of *Geheimer Legationsrat* and a riverside cottage at no cost (Robertson 93). Here in Weimar, gardening became one of Goethe's favorite activities and he often busied himself with identifying and cataloging nearby mosses and lichens, a hobby which would soon grow into larger, more theoretical botanical projects (Steiner, *Goethe* 12).

With his favors from the duke, however, came continuous menial responsibilities both to the council and to Karl August on a personal level—namely, Goethe was called upon numerous times to “smooth over the frictions between the duke and his spouse, and to extricate his ne’er-do-well brother Prince Konstantin from his amatory delinquencies” (Robertson 96). Although Goethe carried out his duties to the duke and the duchy well,

he quickly recognized the toll that this lifestyle was taking on his literary career. However, due in part to his close official associations with the University of Jena, Goethe was able to broaden his scientific studies and interests, leading to his first published scientific contribution *Über den Granit* in 1784. This essay was by and large a matter-of-fact outgrowth of his supervising duties in connection with the mining industry in the duchy and discussed the crystalline structure of granite, not only on the mineral level, but also on the level of slab and strata (Boyle I 348).

Also in 1784, Goethe and a Professor of Medicine at Jena, J.C. Loder, rediscovered the human intermaxillary bone<sup>4</sup>, disproving, at least in Goethe's mind, the widespread belief that the absence of this bone in humans was one of the distinguishing anatomical characteristics of the genus (Steiner, *Goethe* 34-36). This scientific endeavor would have far reaching consequences in Goethe's later scientific thought as a whole. As I will seek to demonstrate in the pages that follow, Goethe had already begun to apply his mostly enduring understanding of the *Urbild* in nature to objects of empirical study and to theorize accordingly even prior to the Journey and the supposed intellectual rebirth that occurred during this time.

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<sup>4</sup> The intermaxillary bone may also be referred to as the incisive bone or the premaxillary bone in English, *das Zwischenkieferbein* or simply *Zwischenkiefer* in German, and, in Latin, the *os intermaxillaris* or the *os incisivum*.



### ***Der Zwischenkieferknochen and the Tasks of Goethe's Early Naturwissenschaft***

Goethe's most significant scientific effort prior to the time of the Italian Journey was his independently conceived theory of the human *Zwischenkieferknochen* ("intermaxillary bone") in 1784. Although findings similar to Goethe's were also made independently by Galen (c.131 – c.210), Andreas Vesalius (c.1514 – 1564), Félix Vicq-d'Azyr (1748 – 1794) and Pierre Broussonnet (1761 – 1807), Goethe's theory of the intermaxillary bone helps to identify one of the basic tasks of his scientific thought on the whole while qualifying the scientific undertakings which he made in the years to follow. In most mammals, the intermaxillary bone is a separate bone which is situated beneath the nasal opening, holding the incisor teeth but which has fused into the maxilla in humans (Richards 369). Most prominent scientists in Goethe's time agreed that this bone did not exist in humans and that the lack of this feature was one of the essential characteristics that separated man from animals. In his essay on the *Zwischenkiefer*, Goethe postulated that the traces of the intermaxillary proved the existence of a basic pattern in nature which was present in humans and other mammals alike (*Goethes Werke* Band XIII 185). The underlying themes of Unity in Nature and *Urbild* seen in Goethe's scientific work during this time are important in relation to the task of the current study as they have numerous theoretical consequences which will reemerge in the following chapters. For now, it will suffice to note that even in Goethe's first ventures into scientific investigation, the novice scientist recognized the philosophical stakes involved with the study of nature beyond what simple empirical observation might lend to the field. In particular, I contend that the foundational premises of Archetype and the use of

*anschauende Urteilskraft* (literally translated as “visual judgment”) in Goethe’s scientific outlook are at work both in his argument for the existence of the intermaxillary bone in humans and, as we will see below in the next chapter, in his theory of plant morphology.

Goethe began vehemently to study anatomy with Loder in 1780 in an effort to perfect his ability to reproduce the human form in drawings. Eventually finding himself more and more attracted to the study of comparative anatomy as a result of his studies, Goethe, as well as his friend Herder, began to take an interest in the question of whether man possesses an intermaxillary bone like most other mammals. Goethe spent several years examining the skulls of a variety of animals, including elephant, walrus, ape, and man. During the early 1780s, Goethe was also in contact with a number of biologists and professors at the University of Göttingen, including Johann Merck (a relative of Friedrich Merck, who founded what would become the Merck KGaA pharmaceutical company), J.F. Blumenbach, Samuel Sömmering, and C.L. von Knebel, who all agreed that the intermaxillary bone was not to be found in humans, despite the fact that Blumenbach found rudimentary traces of the bone in fetuses and infant children. Goethe also found the intermaxillary in human fetuses and believed he could make out the residual traces of its sutures in the adult human skull. As Boyle points out, and modern science would agree, “it is simply not true that man ‘has’ an intermaxillary bone in the same sense in which he ‘has’ a femur. [...] We do not say that the human being possesses gills and a tail, although at an early stage the human embryo possesses both these organs” (350). More recently, what is recognized as the premaxilla or

intermaxillary in animals is referred to as the intermaxillary segment in humans, as it is not given the status of a separate bone from the maxilla. Goethe's contention, however, beyond being an important contribution to scientific inquiry in itself, had theoretical and methodological origins in his idea of the "underlying unity in nature" which acts as "an Ariadne's thread to lead him through the labyrinth" (350).

Even though Blumenbach consented to Goethe's discovery of the traces of the intermaxillary in human fetuses, he did not believe that its rough equivalent found in adult humans resembled the true intermaxillary bone as found in most mammals (Steiner, *Goethe* 34-35). As Richards explains, however, there was little substantive difference between the positions of Goethe and Blumenbach. Blumenbach did not seem to support the prevalent position that the non-existence of the intermaxillary bone in man meant that man's anatomy was subject to different natural principles of development than animals after reading Goethe's research. It can be reasoned, therefore, that Blumenbach had no ideological agenda from the outset and was therefore open to Goethe's theory; he simply did not see evidence for the existence of the intermaxillary bone as such (Richards 373-374). Likewise, Goethe does not argue that the intermaxillary is to be found in the same form as it is in many other mammals, only that the traces of its bone sutures may be found in the adult human skull, so the apparent absence of the bone does not necessarily signal a complete originative divergence between man and other mammals. After Goethe's publication of his findings and some correspondence between himself and Blumenbach, Goethe's seeming naysayer went so far as to admit that he had observed a similar lack of bone sutures in a number of apes as

well as in humans; he certainly was not, in principle, opposed to the possibility that man shared this feature with the animals. That is, Blumenbach did not cling to the belief that man did not share a common natural historical root because he seems to have conceded that man was subject to the same natural laws as animals, judging from what might be understood from his acknowledgement of Goethe's work and his admission that many apes also share man's apparent lack of an intermaxillary bone. Only shortly after Goethe presented his evidence, Blumenbach published his own findings in regard to the *ossis intermaxillaris*, whereupon he admitted that, as in the case of humans, this bone is hardly distinguishable in many apes and that it is more prominent in fetuses. He did maintain the caveat, however, that there is such a huge difference between the intermaxillary as seen in most animals and the comparable structure seen in man so as to be hardly recognizable as the *true* intermaxillary bone. Blumenbach did not come into full agreement with Goethe until about 1825, when he assented to Goethe's theory in his own publications (Steiner, *Goethe* 45). The near absence of the bone in fetuses and apes naturally points to the distinct possibility that man is—as seen especially in his early stages of fetal development—subject to the same principles of growth as other mammals. Clearly, such a small rudimentary feature alone was no proof of man's interrelatedness to other mammals, but it did serve as an occasion to call into question the traditional assumptions about humankind's privileged status in the animal kingdom as having not been subject to the same natural laws as other creatures.

Regardless of the fact that most historians view Goethe's theory of the intermaxillary bone as a small footnote in the history of science (and, admittedly, this

enterprise of Goethe's is only of interest to the current study for comparative and conceptual purposes), Goethe's approach to science and the evolutionary concepts that he anticipated are worthy of the attention of historians of science inasmuch as they put forward a distinctive scientific approach and method. The notion of a distinct feature that separates man from other animals, and hence from the continuity of the laws of nature in regard to the development of species, is suspect in Goethe's view because of his certainty that the entirety of the natural world is unified by and subject to the same laws and principles, which accounts for the undeniable similarities we see among species of plants and animals (Steiner, *Goethe* 35). What these principles consist of remained a mystery to Goethe up to this point in time, however, as this conviction cannot be said to have been much more than an intuition at this point in Goethe's thought. Nevertheless, this suspicion has broad consequences in connection with Goethe's botany as well as the general methodological approach of many of his scientific endeavors, as we will begin to see shortly. For now, let us return to the circumstances which brought about Goethe's application of these natural scientific suspicions to his botanical studies so that we may begin to glean their significance to the *Italienische Reise* and Goethe's Journey.

### **Goethe's Travels and His Early Undertakings on the Italian Mainland**

Although Goethe traveled often and extensively with Karl August throughout Germany, Austria, and Switzerland, he still felt the atmosphere of Weimar to be somewhat oppressive in these first years and likely was only able to withstand them because of his ambiguous, sometimes tumultuous love relationship with Charlotte von

Stein, the aristocratic wife of the duke's Master of the Horse, a lover of art and literature, and the only woman in Goethe's life to have shared Goethe's polymathic interests, including those in the area of natural science (Robertson 100-101). Although Goethe began and slowly worked on a number of literary projects during his first decade in Weimar, he was unable to devote his full attention to finishing many of them, particularly those that required much artistic precision and contemplation such as his dramas. Even though this was partially due to Goethe's civic responsibilities, Goethe admits that his „*Unart, vieles anzufangen und bei vermindertem Interesse liegen zu lassen*“ was responsible for his not having finished many of his works during his early Weimar years (*IR* September 8, 1786). Considering this and the obligation Goethe felt “to crown and complete his education” with a journey to Rome, the time was ripe for a change; after receiving a leave of absence from Karl August, Goethe immediately set out for Italy by way of Karlsbad without informing anyone else of his departure except for his secretary (Boyle 392-393). Although Goethe was silent about whatever plans he may have had for the trip to Italy, Boyle suggests that Goethe had been planning the sojourn for quite a while before finally setting out (Boyle I 393-396). To avoid being accosted by acquaintances and having his planned incognito revealed at the outset of his journey, Goethe set out at three in the morning on September 3, 1786 from Karlsbad in western Bohemia towards the Brenner Pass in Austria en route to Italy—this would begin Goethe's two-year anonymity during his southern travels.

In his initial entries in the text of the *Italienische Reise*, Goethe is mainly preoccupied with examining the local character, the weather, and the geology of the

areas he passes through as opposed to relating personal thoughts and anecdotes as one would expect from this autobiographical form of travel literature. For example, on his way through Bavaria towards Austria, Goethe muses that „*Regensburg liegt gar schön. Die Gegend mußte eine Stadt herlocken; auch haben sich die geistlichen Herren wohl bedacht*“ (IR September 3, 1786). He then informs his audience about the minerals found in the vicinity of Regensburg:

*Ein sonderbar Gestein wird hier zu Werkstücken verarbeitet, dem Scheine nach eine Art Totliegendes, das jedoch für älter, für ursprünglich, ja für porphyrartig gehalten werden muß. Es ist grünlich mit Quarz gemischt, löcherig, und es finden sich große Flecke des festesten Jaspis darin, in welchem sich wieder kleine runde Flecken von Breccienart zeigen. (IR September 3, 1786)*

As one may gather from Goethe's musings about the *geistlichen Herren* of Regensburg and his visually detailed analyses of rocks, the author is largely concerned with recording the sights and sounds of his natural surroundings and reproducing his impressions and experience of the journey on paper in almost scientific detail. This descriptive enterprise turns into a theoretical one as the work progresses.

From Regensburg, Goethe proceeds through Munich, Mittenwald, the Tirol region, and finally over the Brenner Pass. While in Tirol near Innsbruck, Goethe makes the following vague comment after observing the starkly varied geology of the region:

*Zu meiner Welterschaffung habe ich manches erobert, doch nichts ganz Neues und Unerwartetes. Auch habe ich viel geträumt von dem Modell,*

*wovon ich so lange rede, woran ich so gern anschaulich machen möchte, was in meinem Innern herumzieht, und was ich nicht jedem in der Natur vor Augen stellen kann. (IR September 8, 1786)*

Although one can only guess at the relationship between Goethe's geological observations during his coach ride and new contributions to his *Welterschaffung*, it is at least clear by this point in the text that Goethe was actively thinking about his scientific theories and worldview by this time and drawing connections between his knowledge and observations to develop new insights and perspectives. Moreover, one can gather from this that Goethe was actively constructing a somewhat detailed *Modell* in regard to his conception of *Natur* in his mind, even if this was never put to paper in a theoretical or methodological treatise in its entirety. Whether this *Modell* is a scientific-theoretical method or a metaphysical-natural system is unclear from this comment, but Goethe continues in his journey through Austria and over the Brenner<sup>5</sup>, as he does throughout the work, to muse somewhat lightheartedly about the interrelatedness of geology, meteorology, and botany, leading one to believe that this *Modell* refers to the interrelatedness of all branches of science and an emphasis on causal relationships throughout the natural world. In particular, Goethe comments in his September 8<sup>th</sup> entry on the wider spacing of buds and differing shapes of leaves at higher altitudes, even within the same species. Unfortunately, Goethe's writing remains largely descriptive as per the travel literature genre and does not proceed further into a scientific analysis. In

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<sup>5</sup> Goethe claims already to have been working on his *Iphigenie* during his trip over the Brenner Pass at the behest of Herder. Goethe comments that the prose version of the play was more of a sketch of the envisioned project and the prose writing mixed with meter was aesthetically problematic (IR September 8, 1786).



fact, any scientific analyses or theories that Goethe offers seem always to serve a purpose in the work by helping to describe the region or the sense behind geological or meteorological peculiarities. That is to say, these analyses would be interesting not only to the scientist, but also to the curious reader of travel literature.

Leaving the Brenner Pass behind him, Goethe passes into Italy through Trento and Rovereto where he is required to speak Italian in a practical situation for the first time to the monolingual innkeeper (*IR* September 11, 1786). From there, Goethe proceeded down toward Torbole, into Malcesine, then to Verona, Vicenza, and Padua, where he studied the unfamiliar plants at the local botanical garden—like his later studies at the botanical gardens at Palermo, this visit awakened in him a renewed interest in finding the *Urpflanze*, which at this point was in its rudimentary stages even though Goethe recognized the far-reaching consequences of such a theory, if shown to be correct (*IR* September 27, 1786). I shall have to return, however, to Goethe's observations of plants shortly.

Goethe subsequently decided to stay in Venice until he completed some edited materials which were to be included in an edition of his collected works. After finishing these edits and having grown tired of the filth of Venice despite its novelty, Goethe moved on through Ferrara and Bologna, finally reaching Rome on the first of November. This would be the first of Goethe's two stays in the so-called „*Hauptstadt der Welt*.“ Once in Rome, Goethe quickly toured all the most famous Roman sights of antiquity and more recent ages, including the Colosseum, St. Peter's, the Pyramid of Cestius, the Pantheon, and so forth.

Goethe was able to calm his *Wanderlust* long enough to stay in Rome until February with a colony of German artists and artisans including Wilhelm Tischbein, painter of the famous „*Goethe in der Campagna*.“ On February 22, after completing *Iphigenie* and a number of drawings in and around Rome, Goethe traveled on with Tischbein towards Naples, reaching the city three days later. Here, Goethe continued his observations of nature because the region was, as Goethe believed, more agreeable to *living* than to *studying* as such. Goethe did, however, see many more Roman ruins in this area and found what he believed to be the ideal classical landscape outside of Naples. Goethe even visited the ruins of Pompeii, the excavation of which had begun in 1748—Herculaneum was found ten years earlier—and was being continued even up to and beyond Goethe’s visit to the site (*IR* March 11, 1786). Goethe accurately hypothesized that, given the distance from Vesuvius, the ashes and debris from the eruption must have stayed in the air for some time before being carried by the wind and descending upon Pompeii and Herculaneum. Although this musing has no direct significance to Goethe’s botanical studies, it does lend to the argument that Goethe is every bit as much of a scientific thinker and hypothesizer as he is an artist during the time of the Journey. Throughout the *Italienische Reise*, Goethe constantly applies his knowledge of geology, botany, meteorology, and all forms of natural science to interpret his experiences and make hypotheses about the land, its history, and its inhabitants.

### Palermo and the Journey Back to Weimar

Goethe's stay in Rome and Naples is not nearly as important to this study, however, as his time in Palermo, Sicily, where Goethe worked on his first significant theoretical contribution to science—the *Urpflanze*. Goethe destroyed many of his documents from this period, so the account in the *Reise* of Goethe's stay in Sicily was largely reconstructed *ex post facto* in 1816 (Boyle I 467). If we are to believe his account, however, it is clear that Goethe was working on his botanical theories during his time in Rome and Naples, as evidenced in his February 19<sup>th</sup> and March 13<sup>th</sup> entries in the *Reise*, but these theories seems not to have come into fuller fruition until the stay in Palermo and shortly after. Having said his good-byes to Tischbein and his acquaintances in Naples, Goethe set sail with artist Christoph Heinrich Kniep for Palermo on March 29, taking only necessities and the unfinished text of *Tasso* with him for completion (Boyle I 466). Instead of working on his play, however, Goethe turned his attention to finding the *Urpflanze*—a plant that would represent the fundamental pattern of plant growth and differentiation—in the botanical gardens in Palermo. Although his search ultimately ended in disappointment, Goethe's findings would prompt his *Metamorphose der Pflanzen*, published three years later in 1790.

Because so many of the original documents from this period were destroyed or are missing, there is little material available about Goethe's botanical observations in Palermo. However, we know that Goethe was very much concerned at this time with the possibility that, in the natural beauty and botanical diversity of Sicily, he would find the Primal Plant. Goethe had briefly and unsuccessfully searched for such a plant in the

gardens in Padua and Rome, but he was sure that if he was going to find the *Urpflanze*, the exotic terrain of Sicily would be its home. Unfortunately, the more Goethe applied his Linnaean nomenclature to the plants and attempted to find dissimilarities among the Sicilian plants, the more Goethe found that the plants in gardens of Palermo were more similar than dissimilar. Disappointed with his lack of progress, Goethe left the city for Alcamo soon thereafter. He was not entirely discouraged in his endeavor, however, and the failure in Palermo shifted Goethe's attention away from *Tasso* towards his botanical interests. It was only in Sicily that Goethe had begun to feel satisfied with his travels in Italy. As Goethe claims, „*Italien ohne Sizillien macht gar kein Bild in der Seele: hier ist erst der Schlüssel zu allem*“ (IR April 13, 1787). This is likely to have been true not only in the sense of Sicily contributing to the Italian experience, but also in a more personal and intellectual sense for Goethe. It is probable that Goethe's failure to find the *Urpflanze* in Palermo served as a turning point in Goethe's approach to his botanical studies as is indicated in Goethe's subsequent mentions of his *Urpflanze* concept. This failure and the many hours of research that went into it seem to have prompted a shift in Goethe's understanding of the *Urpflanze* from being an actual plant that could be found in nature which represented the fundamental pattern of “plantness” to a conceptual model which acted as a reference point to account for plant differentiation. From this point forward, one sees Goethe making reference to the *Urpflanze* and his botanical inquiries in a more abstract manner.

On April 18<sup>th</sup>, Goethe, Kniep, and their guide left Palermo to explore the Sicilian mountains and countryside, passing by many sites famous for their classical era ruins

and Sicily's natural aspect—particularly Mt. Etna. After traveling through the remainder of the island, Goethe began his journey back toward Weimar, traveling back onto the mainland through Naples for three weeks and into Rome for a second stay from June of 1787 to April of 1788. Although Goethe was officially heading back to his homeland—albeit slowly<sup>6</sup>—after reaching the high point of his trip in Palermo, the influence of Goethe's experiences and observations on his life and intellectual maturity was only beginning. Though Goethe writes much on his observations of Italian art, architecture, and geology, it is clear that his mind continuously returns to his hope of finding and understanding the *Urpflanze*. Goethe expressed his renewed interest in botany and his continuing thoughts on the Primordial Plant in a letter to Herder which was written on May 17 upon his return to Naples after leaving Sicily. Although this is the last mention of his botanical theories in the *Reise*, it is clear from the numerous mentions throughout the work that this subject was constantly being developed in the traveler's mind. The majority of Goethe's work during the return journey involved a revisiting of his uncompleted dramas *Tasso*, *Egmont*, and the *Urfaust*, but Goethe's discussions with Herder and Moritz on his botanical theories inspired copious notes during the return trip and lent to the writing of the *Metamorphose*. Goethe undoubtedly experienced an energetic and creative renewal during his journey, and the change in his writing, his observations, and the sheer output of material during this period is a testimony to that.

As one can tell from Goethe's autobiographical account, the journey itself was as much of a scientific turning point as it was a literary rebirth. The Italian Journey and the

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<sup>6</sup> Goethe actually would not return to Weimar until June 18, 1788, due to his long stays in Naples and Rome and his slow journey back through Florence, Milan, and Switzerland. (Boyle I 534).

resulting publication of *Italienische Reise* was, in part, Goethe's attempt to grapple with his unripe intuition of the *Urpflanze*; the Journey was without doubt a pivotal step towards the realization of Goethe's botanical aspirations which were born out of the enduring scientific themes of *Urbild* and Unity in Nature. Goethe had shown an ever-growing penchant for natural science long before stepping foot in „*das Land, wo die Zitronen blühn*,“ but this predisposition was not tempered by experience until Goethe had spent those several months studying in the botanical gardens at Padua and Palermo. After nearly ten years of relative intellectual silence, Goethe's scientific enthusiasm and observational skill was invigorated by this sabbatical in Italy and Goethe's newly acquired worldliness with regard to observing new plant forms.

All that was remaining for Goethe would be to stay productive upon his return to Weimar and to follow through with the possibilities that his research and empirical observations opened for him. Goethe's *Metamorphose der Pflanzen*, begun shortly after his return to Weimar, would illustrate the amateur scientist's extensive deliberation on botanical subjects and renewed scientific enthusiasm during and after the Italian Journey. The *Metamorphose* and Goethe's scientific endeavors in general, should not be viewed, as Robertson does, as an unfortunate distraction from his poetry and drama (97, 312). Goethe's search for the *Urpflanze* was an ongoing and vital project to him, and one with which any scholar of Goethe would need to be familiar in order to comprehend his vision of *Natur*. Goethe's botanical project and the consequential publication of the *Metamorphose* was an integral outgrowth of the Italian Journey and part of Goethe's larger intellectual project, as I will attempt to demonstrate in the upcoming chapter.

### CHAPTER III

#### THE *URPFLANZE* AS THE ROOT OF GOETHE'S MORPHOLOGY

The task of this section is to determine how one might move forward from Goethe's autobiographical account of his natural scientific thoughts in the *Italienische Reise* to see how his thematic intuitions were put into practice with reference to his botanical and scientific writings after the Italian Journey. As I began to discuss in Chapter II, Goethe, like many Romantic-period philosophers in Germany such as Kant and the later *Naturphilosophen*, "regarded living nature as exhibiting fundamental organic types, often called 'archetypes'" (Richards 8). I will maintain that Goethe's search for the *Urpflanze* catalyzed his studies of morphology and living organisms during the 1780s and the early 1790s by introducing the possibility of a plant archetype to his botanical studies; however, the scientific speculations that utilize this notion became increasingly sophisticated during the Italian Journey and thereafter. I contend that Goethe's conception of *Urbild*, or "archetype," before and during the Journey gave rise to his peculiar method of doing science which sought fundamental patterns in nature from which diversity and variety among organisms derive over time. As previously discussed, the first clear example of Goethe's implementation of archetypal thinking may be seen in Goethe's speculations about the *Zwischenkieferknochen* ("intermaxillary bone"), and later his exploration of the possibility of an *Urpflanze* ("Primal Plant"), as partially documented in the *Italienische Reise* and later elaborated upon analytically and empirically in the *Metamorphose der Pflanzen*. I will maintain that Goethe's ultimate

goal in his scientific speculations is to reveal the fundamental patterns which govern biological variety and allow for the possibility of taxonomical organization of nature and her life forms. In order to conclude precisely what constitutes Goethe's scientific approach and the goals of his projects, as well as what precisely the *Urbild* concept means in itself and to Goethe's project, it is necessary first to perform an analysis of the methodological and conceptual connections between Goethe's initial conception of the *Urpflanze* and his subsequently developed theories on plant morphology.

### ***Die Urpflanze: Goethe's Initial Concept in the Italienische Reise***

Let us begin with a detailed look at the abstract concept of the *Urpflanze* as articulated in the text of the *Reise*. Goethe began speculating about the epistemological question of how one can categorize an organism as a plant during his first years in Weimar, but his conjecture was not pursued with much analytic or empirical vigor until his journey to Italy (Richards 413). Throughout the *Italienische Reise*, Goethe makes abundant mention of his studies in plant morphology and his search for the so-called *Urpflanze*. This concept underwent an evolution during Goethe's journey, as we can see with his progressive mention of his botanical studies. It is clear even from the start of the *Reise* that Goethe had already been thinking about his notion of a plant archetype before arriving in Italy and demonstrating „*wie die Natur, solch ein Ungeheures, das wie nichts aussieht, aus dem Einfachen das Mannigfaltigste entwickelt*“ (IR February 19, 1787). Boyle claims, however, that Goethe's concept of the *Urpflanze* changed in October of 1787 from an idealized model to a “‘formula’ which ‘explains’ the shapes



only of all real plants” (Boyle I 501). In his later search for the conceptual reality behind his *Urpflanze*, Goethe was searching for an underlying simple form which served as the foundation of diversity for plants in the natural world. What constitutes this formula and its theoretical basis will be analyzed in the current section.

While passing through Padua en route to Venice on September 27, Goethe stopped by the city’s botanical garden to observe the plant life; it is here, early on in the *Reise*, that the reader is first introduced to Goethe’s search for a single plant form out of which all other plant varieties may be derived. Complaining of having grown too accustomed to German flora to want to think critically about it, Goethe remarks, „*Bei gewohnten Pflanzen sowie bei andern längst bekannten Gegenständen denken wir zuletzt gar nichts, und was ist Beschauen ohne Denken?*“ (IR September 27, 1786). He implies that his exposure to new plant life in Italy has renewed his enthusiasm for botany and revived his interest in finding his hypothesized *Urpflanze*. Goethe writes,

*Hier in dieser neu mir entgegentretenden Mannigfaltigkeit wird jener  
Gedanke immer lebendiger, daß man sich alle Pflanzengestalten  
vielleicht aus einer entwickeln könne. Hiedurch würde es allein möglich  
werden, Geschlechter und Arten wahrhaft zu bestimmen, welches, wie  
mich dünkt, bisher sehr willkürlich geschieht.* (IR September 27, 1786)

Even this early in the journey, before his understanding of the Primal Plant was purely conceptual, Goethe was convinced that an archetypal *Pflanzengestalt* was the underpinning to a conceptual model that would provide a point of comparison for contextualizing progressive variations among plant species and genera so that an

intellectually justifiable taxonomical system might be established. However, he still thought at this time that this form was actually to be found in nature and he remarks, „*Auf diesem Punkte bin ich in meiner botanischen Philosophie streckengeblieben, und ich sehe noch nicht wie ich mir entwirren will. Die Tiefe und Breite dieses Geschäfts scheint mir völlig gleich*“ (IR September 27, 1786). At this point in his botanical studies, Goethe seems to have admitted to himself that the problem remained that such a form was yet to be found in nature and it is likely for this reason that he found himself perplexed as to how to proceed in his speculations.

Once in Rome, Goethe found himself continuing his botanical speculations and, seeing no buds among the flowering plants, came to the realization that buds form as a means of protection from the cold. Although this seems to have little significance in relation to his *Urpflanze* theory specifically, it is within this passage and in connection with his botanical musings that Goethe remarks that „*Überhaupt mit dem neuen Leben, das einem nachdenklichen Menschen die Betrachtung eines neues Landes gewährt, nichts zu vergleichen. Ob ich gleich noch immer derselbe bin, so mein' ich, bis auf innerste Knochenmark verändert zu sein*“ (IR December 2, 1786). This “new life” which Goethe experienced as a result of observing the plant life in Rome as well as, presumably, the Italian culture in general serves as evidence for the widely accepted intellectual renewal that Goethe underwent in Italy. More importantly to the concerns of the current project, however, it is specifically in connection with his natural investigations and experience in the South of nature's work that Goethe is compelled to declare his intellectual rejuvenation.

Once in Palermo, Goethe began to search for the *Urpflanze* with a renewed vigor. For about the first year or so of the journey, Goethe still seems to have been searching for an actual live plant among the Botanical Gardens and countryside of Italy and the distinction between the *Urpflanze* as a conceptual model and as an actual plant is blurred in the early remarks about the subject. It is not until Goethe reaches Palermo in Sicily, which he likens to the Gardens of Alcinous, that we see a turn towards a more theoretically feasible account. Early on the morning of April 17, 1787 during Goethe's stay in Palermo, Goethe went to the public gardens to work on his never-completed dramatization of Odysseus' stay among the Phoenicians which was to be titled *Nausikaa* and was presumably inspired by his own travels to the Scheria-like island of Sicily. He was unable to concentrate on his poetry, however, as he was struck by the diverse plant life he found in the gardens. Goethe muses:

*Im Angesicht so vielerlei neuen und erneutes Gebildes fiel mir die alte Grille wieder ein, ob ich nicht unter dieser Schar die Urpflanze entdecken könnte. Eine solche muß es denn doch geben! Woran würde ich sonst erkennen, daß dieses oder jenes Gebilde eine Pflanze sei, wenn sie nicht alle nach einem Muster gebildet wären? (IR April 17, 1787)*

This conception of a *Muster* or *Urbild* in Goethe's scientific thought—this being the first mention of it in the *Reise*—is the guiding force behind his botanical speculations as well as many of his other zoological and morphological writings such as those related to the theory of the intermaxillary bone. The above passage is an indication that Goethe's notion of the *Urpflanze* was, during this time, moving away from a literal object to be

found in nature and developing into a hermeneutic tool for use in contextualizing and categorizing diversity in plant life so as to work toward a deliberate, non-arbitrary taxonomy<sup>7</sup>. Also, a few entries later on April 21, Goethe makes a short comment that the fennels near Alcamo always develop from *Einfachheit* (“simplicity”) to *Mannigfaltigkeit* (“diversity”). Although one might not want to read too much into this passing comment, this observation may signal a shift in Goethe’s attention to the morphological development of plant organs from simplicity to diversity as observed in the *Metamorphose*.

Nonetheless, it was only later in the *Reise*, particularly in the letter to Herder in May of 1787, that Goethe starts to show signs of conceiving of the *Urpflanze* as an abstraction in a more cognizant manner and thus moving closer to concerning himself with metamorphosis rather than searching for an actual ‘plant prototype,’ as it were. He confides to Herder:

*Ferner muß ich Dir vertrauen, daß ich dem Geheimnis der Pflanzenzeugung und –organisation ganz nahe bin und daß es das einfachste ist, was nur gedacht werden kann. Unter diesem Himmel kann man die schönsten Beobachtungen machen. Den Hauptpunkt, wo der Keim steckt, habe ich ganz klar und zweifellos gefunden; alles übrige seh’ ich auch schon im ganzen, und nur noch einige Punkte müssen bestimmter werden. Die Urpflanze wird das wunderlichste Geschöpf von der Welt, um welches mich die Natur selbst beneiden soll. Mit diesem*

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<sup>7</sup> Magnus discusses Goethe’s conceptual relation to Linnaeus’ taxonomical system; I will return to this relationship later in the chapter.

*Modell und dem Schlüssel dazu kann man alsdann noch Pflanzen ins Unendliche erfinden, die konsequent sein müssen, das heißt, die, wenn sie auch nicht existieren, doch existieren könnten und nicht etwa malerische oder dichterische Schatten und Scheine sind, sondern eine innerliche Wahrheit und Notwendigkeit haben. Dasselbe Gesetz wird sich auf alles übrige Lebendige anwenden lassen. (IR May 17, 1787)*

The declaration of this „wunderlichste Geschöpf“, which even Nature herself would supposedly envy, is the key to Goethe’s shift. That is to say, if Nature is to envy this manifestation of Goethe’s imagination, then it is clear that, by this time at the very latest, the *Urpflanze* had become strictly and purely an archetype upon which all possible plant forms could be imagined. In Goethe’s own words, this *Urpflanze* now appears as a *Gesetz* (“law”) of a sort as opposed to a tangible object. Moreover, this archetype is not only a hypothetical model, but an essential notion that conveys the inner truth and necessity of ‘plantness.’ While this conception of the *Urpflanze* reeks of Platonic idealism, it is wise not to confuse Goethe’s archetype for a mere idea in the everyday sense nor a metaphysically separable and independent essence residing somewhere in ‘Platonic heaven,’ as it were. Wilkinson and Willoughby suggest that we might think of Goethe’s *Urpflanze* a “sensuous idea” in reference to Goethe’s search for “sensuous embodiment for his abstractions” (178). That is, the *Urpflanze* is a notion that has been abstracted from sensate observations to help describe the being and derivation of those objects that we can classify as plants.

Not only does Goethe's *Urpflanze* take on taxonomical and empirical import in its later manifestation, but we also see a shift toward the morphological thesis of the *Metamorphose der Pflanzen*, which Goethe would continue to work on over the next several years. The clearest movement towards this stage of Goethe's botanical speculations also occurs in his letter to Herder wherein Goethe recalls the following:

*Es war mir nämlich aufgegangen, daß in demjenigen Organ der Pflanze, welches wir als Blatt gewöhnlich anzusprechen pflegen, der wahre Proteus verborgen liege, der sich in allen Gestaltungen verstrecken und offenbaren könne. Vorwärts und rückwärts ist die Pflanze immer nur Blatt, mit dem künftigen Keime so unzertrennlich vereint, daß man eins ohne das andere nicht denken darf. Einen solchen Begriff zu fassen, zu ertragen, ihn in der Natur aufzufinden, ist eine Aufgabe, die uns in einen peinlich süßen Zustand versetzt (IR May 17, 1787).*

Richards notes that it was at this point that Goethe realized that tracking plant metamorphosis was the key to finding his *Urpflanze* (Richards 396).

### **From Essentialism to Morphology**

Goethe published his *Versuch, die Metamorphose der Pflanzen zu erklären* in 1790, shortly after his return to Weimar. This relatively non-technical essay concerns itself with a step-by-step description of the processes of plant metamorphosis, tracing typical plant development, particularly that of the organs of the shoot, from germination to sexual reproduction. For the most part, Goethe is not here concerned with the growth

and development of particular species of plants and their morphological variations and he shows an ignorance of much of the botanical scholarship of his time, making apparent his “amateur approach” (Arber “*Natural Philosophy*” 40). Goethe seeks a general process of growth that holds true for most plants; in particular, he wants to find the relationship between leaf and the other organs of the plant so as to track the means by which an archetypal structure—in this case, the leaf—varies to create organs with specialized functions (§ 19). Goethe makes note in the first section of the essay that cotyledons often become leaves; this is noteworthy because Goethe’s theory of plant metamorphosis supposes that all plant organs develop, in one fashion or another, from a rudimentary leaf-like structure. Whereas Goethe’s more elementary notion of the *Urpflanze* posited an archetypal plant ancestor from which all others might spring, Goethe’s morphology traces all transformation and growth of plant organs to primordial, mutable leafy structures.

The first such organs that Goethe treats are those of the cotyledon; the massed structures of cotyledons are crude and undeveloped and are hardly recognizable as leafy organs until they spread out in area and become thinner and greener. Although they do not usually share all of the characteristics of mature leaves (such as a mid-rib, lateral veins, hairs, and details in shape) which develop later and further up on the stem, these leafy masses eventually mature to be recognized as the first leaves of the stem. Even at the outset of metamorphosis, the plant’s first transformation is from a leafy mass (the cotyledon) into a more shapely and mature leaf structure which will function much like its later companions (MP § 13-14). Much of differentiation among plants is accounted

for by a natural change in the process of metamorphosis from leaf to another, more complex organ. However, environment can also affect differentiation among plants of the same species, depending on factors such as altitude, air quality, abundance of water, and so on.

Goethe continues by describing the growth of stem leaves and the calyx, which consists essentially of a reorganization of stem leaves around the flower's corolla. The calyx is formed by an arrangement of a set number of nodes and leaves around a central point (§ 38). Interestingly enough, Goethe shares his observation that sometimes calyx leaves exhibit color alteration, demonstrating the morphing process of these leaves into the corolla of the flower, where "nature carries growth to a conclusion" (§ 106). Petals and corollas may thus be described as extended, expanded calyces and the androecium may be understood as a collection of condensed petal structures. The nectaries, furthermore, may be seen as a transition between petals and stamens while the fruit is an expansion of the reproductive organs. In this development, we see an alternating pattern of expansion and contraction of organs from seed to stem leaves, leaf to calyx, calyx to petal, petal to stamen and nectary, reproductive organs to fruit, and finally, the extreme contraction of fruit to seed (§ 73).

Toward the end of the essay, Goethe proposes that the proliferated rose and the proliferated pink are prime examples of his theory of plant growth; this naturally leaves one to assume that, despite their variations from the theory, these plants may come close to resembling that Holy Grail of botany that Goethe had been searching for in the Botanical Gardens at Palermo. By this point in Goethe's botanical studies, however, the



archetypal notion of an embodied plant essence that we see in the *Reise* changed into a more mature morphological project which sought to identify commonalities between plants instead of trying to link them to a real-world common root. The notion of archetype certainly persists in Goethe's morphology insofar as one of Goethe's goals was to identify the fundamental character of the plant so as to justify the existence of a taxonomy and a notion of "plant," but the essentiality of plant organization persists only in "*der Einbildungskraft und dem Verstande*," as Goethe termed it (§ 103).

### **Goethe's Morphology as an Outgrowth of the Linnaean System**

There is both a historical curiosity and a psychological dimension to Goethe's conception of the *Urpflanze* and his resulting theory of plant morphology, which seem to strive for a goal similar to that of Linnaeus' binomial nomenclature inasmuch as both seek to identify unique biological characteristics and categorize organisms according to their comparative qualities. Linnaeus sought similarities and differences between various physical qualities among organisms for the purpose of categorizing life and naming organisms according to a hierarchy of shared and unique characteristics (kingdom, phyla, class, order, family, genus, species), working from the assumption that organisms with similar physical characteristics should be more closely associated with one another within the context of the system. This comparative venture does not necessarily suggest a genetic or natural historical relation between species, but surely an ontological and categorical one. Goethe is known to have kept a copy of Linnaeus' work with him during many of his botanical studies, but as far as Goethe was concerned,

mere nomenclature affords little or nothing whereas a comparative study of plant life based on the *Urpflanze* archetype puts plant diversity into perspective, allowing for environmentally-caused variation and an implicational understanding of similarities within and between species (Magnus 41-45). Although Linnaeus clearly lacked the genetic and evolutionary evidence to prove this latent assumption of hereditary relation between species with similar characteristics, this system suggests at the very least an ontological relationship that is useful for classification and understanding types of organisms. Whereas Goethe sought rules and principles of growth and origination, Linnaeus' project is a comparative one inasmuch as it contrasts one species to another and describes the static qualities of the adult form of the plant, with the goals of cataloging nature and providing the conventions for naming organisms. The original *Urpflanze* model promised to offer the beginnings of a real-world connection between organisms of the same taxonomic rank. When Goethe came to suspect that the essential character of such a connection was unfeasible and simply not to be found in the natural world, he attempted to show that plants share common patterns of growth in order to help justify their taxonomical grouping. Goethe recognized that young organisms of one species often share many qualities with young organisms of other species and then diversify as they become older—a pre-evolutionary notion that demonstrates not only change over time, but also rudimentary similarities between all plant life and, theoretically and by extension, all organisms. As one might detect, the evolutionary concept of the relation between species was alive and well long before Darwin's theory of natural selection, just not in the form of natural selection or genetics. Although one

might say that Goethe anticipated evolutionary theory insofar as he intuited a natural continuum between organisms and a morphological common root, such a viewpoint was not particularly new and it can be seen in different forms throughout history from the ancients, such as Empedocles, up to the 19<sup>th</sup> century.

What is to be found, then, in the *Metamorphose* is an extension of Linnaeus' work—the unspoken thesis being that if one is to determine genera and species exactly, then a common root or a basic model from which things vary is required. Then one may determine the manner in which things change and develop into increasingly advanced and varied species. It is impossible to trace such development only according to characteristics without a method and a model for doing so. That is where Goethe's morphology comes into the picture. Whereas Linnaeus was the father of taxonomy, Goethe, in many respects, is the father of morphology, having even coined the term (Yourgrau 71). Goethe's task was different from that of Linnaeus in that Goethe was not seeking an ontological system or a taxonomy of diverse organisms with diverse qualities, but rather a series of correlations that would bring all plants together and help to explain biological variation.

While it is true that Linnaeus brought plants into unity by classifying them, Linnaean nomenclature does not posit a unifying principle for classifying plant life as plant life, a principle of growth and development, or any kind of process or template to explain variation, hence Goethe's frustration in the Botanical Gardens described in the following:

*Ich bemühte mich, zu untersuchen, worin denn die vielen abweichenden Gestalten voneinander unterschieden seien. Und ich fand sie immer mehr ähnlich als verschieden, und wollte ich meine botanische Terminologie anbringen, so ging das wohl, aber es fruchtete nicht, es machte mich unruhig, ohne daß es mir weiterhalf. (IR April 17, 1787)*

Goethe believed that the key to variation between species of plants lie in the variation in organ development in plants—that is, the tenet that leaf turns into different organs. In this theory, we are presented with a very basic organ that morphs into different things to serve different functions, just as a more basic organism might vary and morph into more diverse species and organisms. Goethe saw the hint of a basic organism—a template or an archetype—behind the adult plant in its rudimentary form before variation and maturation occurs. This is the artistic vision in Goethe’s science, which will be an important factor in the forthcoming argument. Linnaeus never sought a template form of an organism from which others might emerge, which brings Goethe’s task conceptually closer to Darwinian theory, though Goethe does not posit anything remotely similar to a theory of natural selection—only a latent theory of common ancestry. The fact that Goethe believed the *Urpflanze* was an actual plant which might actually be found in nature lends to the reality that Goethe was not thinking in terms of competition or survival. Even though, like Darwin, Goethe seems to have a notion of change over time among organisms, there is no defined driving principle behind said change as is found in Darwin’s theory of natural selection.

Both in the *Italienische Reise* and in the *Metamorphose*, we come to see the Italian Journey as a period of steady scientific development based on Goethe's elaboration upon his conceptualization of *Natur*. In the *Metamorphose*, Goethe's botanical speculations demonstrate a further level of maturity than what is found in the *Italienische Reise* in that Goethe starts to deviate from his Holy Grail notion of the *Urpflanze* toward a morphological theory which is significantly more realistically determinable and empirically based. By the time Goethe returned from Italy and began writing the *Metamorphose*, he was no longer searching for an abstract notion, an idealistic archetype, or even a non-existent plant, but rather an explanation for the growth of complex, various plant structures and species variation. This is significant insofar as Goethe was moving ever closer to his object of explaining diversity by identifying commonalities and the process of metamorphosis in plants. In doing so, he works more closely with empirical data, only using abstract notions as guideposts in his work to help concentrate on the goal of finding the root of plant variation so as to posit a deliberate groundwork for plant taxonomy.

Goethe by no means abandoned the *Urpflanze* as a concept by the time he wrote the *Metamorphose*; rather, his understanding of the basic notion continually changed by taking on a less abstract and less conceptual character. The notion of a fundamental character of plant organization endured throughout the botanical studies; in order to keep alive the goals and aspirations that Goethe's *Urpflanze* theory represents, he had to develop his understanding of the process of morphology rather than simply attributing plant diversity to common, descriptive features. It struck him that variation occurs in the

growing plant and there is a process of variation that is led by the leaf organ to create other organs. Goethe came to think of the metamorphosis of the leaf organ as a metaphor for a principle of plant growth from basic to complex and the concept of the *Urpflanze* became at this point a representative of the most basic form of plant life with shared characteristics of other plants—it was not a biological ancestor from history back in the genetic chain. The principle of variation in plants is contained within the leaf and one must turn to these abstract principles of organization in Nature in order to uncover the most primal plant form.

## CHAPTER IV

### METAPHYSICAL UNITY IN GOETHE'S VISION OF *NATUR*

As I pointed out in the previous chapter, one can begin to detect in the *Italienische Reise* a progression of the *Urpflanze* concept from an abstract, essential conception of plant archetype to an empirically demonstrable delineation of plant growth and morphology when read in conjunction with Goethe's *Metamorphose der Pflanzen*. As we have seen from Goethe's science during the 1780s up to 1790 with the publication of the *Metamorphose*, Goethe's notion of Archetype and Unity in the midst of apparent variation among organisms pervades the *Reise* and his scientific work during this period even though this concept changed from its inception as an essential concept; these themes started with the assumption of morphological interrelatedness between humans and animals in the *Zwischenkieferknochen* study and extended to the hypothesis of a fundamental unifying principle behind plant organization in his morphological studies. In both cases, there is an assumed metaphysical preconception of Nature as the *Eins*—a singular unified metaphysic wherein all constituent parts are interrelated—a concept to be found both in Goethe's work and in the modern discipline of comparative biology (Ebach 256). I have already argued that Goethe's intuition of an archetypal Primal Plant developed into a more complex and extensive idea during the Journey, as most if not all important ideas do over time; what remains to be illuminated about the *Urpflanze*, then, is the way that this concept developed and why. The current chapter, then, will analyze in further detail the theoretical basis for Goethe's botanical investigations, particularly as

regards the metaphysical conception of Unified Nature and the *Eins*, in order to account for the change in Goethe's understanding of Nature and the Primal Plant in the *Italienische Reise* and during the time period under investigation. I will begin by expanding the discussion of *Urbild* to include its relation to the theme of Unity in Nature and Goethe's use of artistic vision in his science.

### **Natural Laws and Unity in Nature**

In the case of Goethe's "discovery" of the intermaxillary bone, one sees a suggestion of Archetype and Unity in Nature similar to that found in the *Metamorphose der Pflanzen*. According to Steiner, the basic inspiration underlying Goethe's theory of the *Zwischenkieferknochen* was the position that man is not distinguishable from other animals due to any *single* feature or essential quality. Rather, an amalgamation of variations and differences in sundry features distinguishes organisms because the laws of nature, morphology, and "inner identity" are present in all creatures (Steiner, *Goethe* 38). All creatures are connected to the oneness of nature due to being subject to its laws, regardless of the fact that their small differences (that is, differences in kind, not number) render them discernible from one another. Regardless, only these small differences in the midst of a multiplicity of features "[assign] to man his rank in the order of beings" (37).

Although Goethe's search for an actual *Urpflanze* failed and, regardless of the conceptual difficulties in connection with the essentialism of any archetypal notion (i.e., problems with generalization, metaphysical idealism, and quandaries related to these



topics), Goethe's search for the natural laws governing plant organization and variety brought him to a number of important insights that are explicated in the *Metamorphose der Pflanzen*, not least of which was his understanding of most plant organs as modified forms of leaves. Aside from his endeavors in the *Metamorphose*, Goethe does not elaborate upon the ontological nature of these natural laws which determine animal and plant identity and organization, nor the so-called "inner identity" of man in great detail, but this may not strike the reader as surprising, seeing as how the laws at this stage in Goethe's thought are mostly being presumed through observations of similarities among organisms, not through undisputable mathematical proof. The operating premises behind Goethe's work are the notions of Archetype and Form which manifest themselves materially. Grasping the immediate reality of these laws or archetypes is not possible—to be sure, Goethe is not thinking chemically or genetically, but rather his scientific thought seems to operate on a modified form of idealism which does not assume an otherworldly dimension of forms and is manifest through matter and sense. Returning to Goethe's May 17<sup>th</sup> letter to Herder in the *Italienische Reise* wherein Goethe comments that "*Dasselbe Gesetz wird sich auf alles übrige Lebendige anwenden lassen*" in reference to the law of plant organization, the suspicion is revealed that not only are all *plants* subject to the same laws, but also all living things of every variety are subject to the laws of Nature. In order to gain an understanding of the role and importance of Goethe's scientific work to the *Italienische Reise* and to the Journey, it is important first to analyze some of Goethe's own thoughts on *Naturphilosophie* as well as the critical literature written about this subject. Although Goethe's scientific work is thought-

provoking in its own right, it is of little more than antiquarian interest without the necessary qualification that makes Goethe's wider thematic concerns become apparent.

### **Goethe on *Die Natur***

During his second stay in Rome, according to the *Reise*, Goethe came across a phrase by the Prophet from Zurich in his reading: „*Alles was Leben hat, lebt durch etwas außer sich.*“ Meditating on this phrase, Goethe naturally found the view it represented to be exceedingly wrongheaded due to its heterogeneous metaphysical and theological dependencies. Complaining that this proved a fundamental ignorance of the truths of Nature on the part of the author of the phrase, he mused that, were he to establish his own Academy, he would not permit entrance to anyone who had not seriously pursued „*irgendein Naturstudium*“ (IR October 5, 1787). Goethe thought of Nature as a metaphysically unified structure which varies and elaborates upon simple structures in the process of metamorphosis, the process of diversification of organisms from simplicity. This is nowhere clearer than in a short aphoristic fragment on the metaphysics of Nature which is usually attributed to Goethe's hand.

The 1782 essay »*Die Natur*« first appeared in Part xxxii of the *Tiefurter Journal*, a popular publication in Weimar which accepted only anonymous manuscript contributions. Goethe initially denied his authorship of the piece<sup>8</sup>, only to reclaim it in 1828, several decades after the essay's publication in a collected edition of his general scientific writings even though, at this distance of time, Goethe could not remember

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<sup>8</sup> Given the anonymity of the journal, this should not come as surprising even if Goethe did write the piece.

having written it (*Goethes Werke* XIII 48). Boyle and Steiner believe that this essay was actually written down by Swiss scholar G.C. Tobler from a conversation or series of conversations about the topic which he had with Goethe (Boyle I 338; Steiner, “*Zu dem ‘Fragment’*”). Conversely, Arber suggests that Goethe’s conversations with Tobler may have actually had a stronger impact on the former than they did on the latter, i.e., Goethe’s vision of *Natur* in this time was influenced by his association with Tobler (Arber, “Goethe’s” 119). There is too little evidence to know for certain, but Goethe certainly identified his own convictions with these aphoristic declarations about nature if he allowed the piece to be included in a collection of his own works. This question of authorship surely presents a problem in connection with the use of this essay in the current study, as one might argue that Goethe may not have identified fully with the statements in this essay (one may even wish to call it a prose poem) at the time of the Italian Journey, if we are not generous about the possibility of a somewhat enduring understanding of *Natur* in the years between 1782 and 1828. I believe the likelihood of a dramatically changed vision of *Natur* is small, however, given the essay’s thematic connections with the above musings in the *Reise* and in the principles found in the *Metamorphose*. Even if the essay came purely from the mind of Tobler, the facts remain that a) Goethe seems to have identified with the piece in his later years, b) the work records some of the content of a number of conversations between Goethe and Tobler, and c) there are several connections between the abstruse wisdom of the piece and the goals of Goethe’s scientific writings.

»*Die Natur*« is convoluted and somewhat problematic due to its mystical, sometimes self-contradicting language, but recognizing the pervading themes of the piece helps not only to confirm Goethe's scientific approach to Nature as observed in the *Metamorphose* and presumably during the Italian journey, but also to lend credence to the seeming likelihood that Goethe's understanding of *Natur* endured through the years and was at play in his scientific work during the 1780s. Simultaneously aphoristic yet unified in structure and theme, »*Die Natur*« predicates nature as a philosophical conception and describes what nature "does" (that is, its metaphysical function), all the while describing man's relationship to it. Rather than characterizing the work only as an essay, it may be more accurate to describe it as a repetitive, cyclical meditation upon the themes of vastness, elusiveness, unity, mutability, creation and annihilation as predicates of Nature. As its presentation of a multitude of seemingly contradictory dualisms demonstrates, the essay uses mystical and often metaphorical language to describe its subject. The work is by no means analytic, yet it directly addresses the fundamental philosophical precepts that arise in the *Italienische Reise* and the *Metamorphose*.

The clearest of these conceptual similarities to the *Metamorphose* may be seen in the remark that

[*Die Natur*] ist die einzige Künstlerin: aus dem simpelsten Stoffe zu den grössten Contrasten: ohne Schein der Anstrengung zu der grössten Vollendung—zur genauesten Bestimmtheit, immer mit etwas weichem überzogen. Jedes ihrer Werke hat ein eigenes Wesen, iede ihrer

*Erscheinungen den isolirtesten Begriff und doch macht alles eins  
aus.* (Arber “Goethe’s Botany” 121)

Not only is *Natur* a kind of creator-goddess in this view, as Richards would maintain; she is the ultimate and only true artist, creating the most complex structures and creations out of the simplest material—out of the *Stoff* which emanates from the *Eins*. *Stoff* is a term from Goethe’s aesthetic terminology which may be defined as a “medium,” that is, the actual material that is used to create both the outer form and the resulting significance in a work of art, such as paint, words, or tones, as the case may be (Stephenson 51). In the above passage, the metaphor of the artist and his medium leads one to detect an aesthetic, creative understanding of the natural world in Goethe’s view. This creative force, however, is one that creates and reorganizes a multiplicity of bodies out simple material and simple laws—similar to what we see in the case of the metamorphosis of leaves into varied plant organs and in the notion of the *Urpflanze* as a common ancestor to diverse plant species.

The parallel with Goethe’s practical implementation of the notion of Archetype as well as increasingly complex and diverse plant structures forming from simple organs, namely leaves, should be clear and need not be belabored *ad nauseam*. However, it is interesting to note that the macrocosmic vision of nature in this earlier writing was turned into a narrower, more local account of nature at work in a botanical microcosm, so to speak, in the *Metamorphose*. What we see here, then, is yet another example of Goethe starting from a basic conceptual vision as he did in the case of the rudimentary vision of the *Urpflanze* and rationalize it down to a practical application, in the case of

the *Metamorphose*, the creative force of nature embodied in the leaf's capacity to create diverse plant members from simple material.

Additionally, Goethe's essay is often concerned with the metaphysical and epistemological questions that the study of nature begs. Beyond only defining and predicating Nature herself, »*Die Natur*« addresses time and again man's inability to escape from his entrapment within nature as well as his inability to understand and come closer to nature through the senses and intellectualization because such sense impressions only mirror the truth and grandeur of nature. At the same time, however, Nature "*freut sich an der Illusion*" and whoever follows Nature's appearances trustingly, presumably through sense, is gathered unto Nature's heart (46). I believe there is an allusion in this passage, whether direct or indirect, to Goethe's abstract conception of *anschauende Urteilskraft* and the modern idea of so-called "delicate empiricism." As I will argue in connection with this term, the previously-mentioned change in Goethe's viewpoint regarding the nature of the *Urpflanze*, as featured in the *Italienische Reise*, is indeed a "case study," as it were, of Goethe's scientific application of *anschauende Urteilskraft*.

### ***Anschauende Urteilskraft* and "Delicate Empiricism"**

Ebach and Flannery use the term "delicate empiricism" to describe so-called Goethean science, as it strives toward conciliation between intellect and the "visual aspect" of perception (Ebach 262, Flannery 275). While this depiction is certainly useful to a greater or lesser degree, Goethe's own description of his method involved the

implementation of *anschauende Urteilskraft*—a term that is quite difficult to translate into English while retaining the original sense. In her brief discussion of Goethe in *The Mind and the Eye*, Ann Arber defines *Anschauung* as “intuitive knowledge gained directly through contemplation of the visible aspect” (122). Related to this definition, then, we may gather that Goethe’s *anschauende Urteilskraft* indicates man’s power of judgment and interpretation as pertaining to the contemplation of visual sensation.

Although the scope of this project is not to examine Goethe’s writings from his middle to late period, Goethe’s short 1817 essay »*Anschauende Urteilskraft*« makes very brief mention of the epistemological condition of man due to his limitations by the senses and his ability to intuit from general to specific in an effort to overcome this epistemological handicap. Whereas »*Die Natur*« depicts Nature as a mystical, pantheistic, maternal creator-entity that can hardly be pierced by her human creations, »*Anschauende Urteilskraft*« begins to confront the problem of incomprehensibility and mystique in Nature by addressing the epistemological role of sense, intuition and intellect in comprehending the principles of nature. However, the essay is too short to analyze the depth of the matter duly or to add much to our working definition of the term.

Yourgrau comments that “Goethe approached every natural phenomenon, the world of appearance, with the intuition of an artist. His conception of the *cosmos* was restricted to forms, colours, sounds, thoughts, feelings, and passions” (73). One might describe this approach as an attempt to expand the base of evidence to all aspects of human experience, including, but not limited to sense data. Goethe never subordinated

idea to sense or vice-versa; rather, he seems to have pursued an epistemology in which the imagination was an interfaculty capacity which combined the efforts of the senses, memory, and reason to create reality. It was

Goethe's conviction that meaning is intrinsically sensuous. The geometric shapes which the mind lends to objects, the phenomena, strictly speaking, do not have; they exist rather in a nexus constituted by their objectification in prehension of each other. And these relations between things, conjunctive as well as disjunctive, are just as much matters of sensuous apprehension as the things themselves. (Stephenson 50)

Like Kant, Goethe seems to have sought a compromise between strict British empiricism and the idealistic tradition. Unlike Kant, on the other hand, Goethe attempted to eliminate altogether the dualisms that plagued the empiricist-idealist debate and take a completely different approach to the conundrum whereby such dualistic difficulties are non-issues.

In addition to Goethe's interfaculty approach to science, Flannery maintains that there is a Goethean scientific tradition that has been followed by innovative scientists such as the aforementioned Agnes Arber who believe that empirical evidence and data are only starting points in science—that is, the fundamental building blocks of theories and perspectives that allow us to make sense of the natural world and ourselves in relation to it. This tradition involves supplementation of the scientific method with a concern for significance in regard to how scientific work impacts philosophical, cultural,



and historical beliefs and perspectives, as Agnes Arber argues in *The Mind and the Eye*. In addition to observed data, the human faculties of intuition, “non-verbalizable” knowledge, and even artistic-visual sense help the scientist (especially the biologist who is concerned with tangible observations in a way that chemists and physicists are usually not) to integrate evidence into a meaningful worldview in order to gain an understanding of how the natural world functions, a goal which mathematics cannot achieve (275). The human mind can deal with certain scientific problems much more appropriately than computers and integers, given the mind’s imaginative and visual functions<sup>9</sup>. It is Goethe’s belief that perceptions of natural phenomena create ideas about nature which broaden one’s understanding of the world and life in general. Goethe’s hallmark concern with the relationship between parts and the united whole in effect characterizes the entirety of Goethe’s philosophical and scientific thought. I will return to this metaphysical Unity in Nature shortly.

Goethe’s discovery of the intermaxillary bone represents the first example of how his observations are infused with intuitive significance beyond what the bare facts suggest. As mentioned in Chapter II, Goethe’s rediscovery of the *Zwischenkieferknochen* and his proposition of the *Urpflanze* are significant insofar as these concepts indicate fluidity between the organizational laws governing all biological entities. Goethe began his inquiry with an assumption of Unity in Nature and a distinctive feature of man such as the lack of an intermaxillary bone does not hold intuitive water in Goethe’s thought because of his unifying tendency—i.e., his “all is

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<sup>9</sup> Here, I take “aesthetic” or “visual” perception to mean comprehensive, imaginative understanding of the significance and interrelatedness of data and individual, personal perceptions.

one” approach. An argument for the existence of this bone was an affront to the metaphysic of the traditional science of the day and that of several of the scientists with whom Goethe had been corresponding.

Even though much of Goethe’s scientific work is considered dated by the scientific community, his findings attest to the advantage of his intuitive scientific approach, which put Goethe in a position to anticipate Darwinism and genetic ancestry in his theories of the intermaxillary and the Primal Plant. Although this “delicate empiricism” of Goethe’s is hardly an established method due to its pseudo-idealistic presumption of archetype and its stronger reliance on the mind's eye than on systematic observation and experimentation, the approach is largely identical to that which all scientists practice when forming a hypothesis. No scientist comes to his or her theoretical suppositions by means of mere observation, but rather by means of intuitive vision and elaboration upon a hermeneutic of the natural world. This means, in the theory of the intermaxillary for example, that man is intimately intertwined with the machinations of the natural world and the laws which govern it; it should therefore come as no surprise that man shares many biological features with mammals that are characterized as being close to one another in the Linnaean nomenclature (Steiner, *Goethe* 35). As in the case of plants, animals develop from a primal form and are related through natural law and are thus not created separately from one another. We see in Goethe’s theory of the *Zwischenkieferknochen* a vision of man that makes him subject to the same Natural Unity and archetypal laws of organic development as other animals. The precise metaphysical nature of such a law is another question entirely, and one that,

unfortunately, is not analyzed by Goethe in any detail—this is somewhat understandable, however, given the level of scientific advancement at the time. It is only in his discussion of plant morphology that Goethe offers something resembling a natural law of organism morphology and development.

Goethe did not start his morphological inquiry from a massive foundation of data and observations. Goethe began as an amateur botanist to develop his theory—even before collecting the bulk of his data in Palermo—with a relatively small amount of observational data gathered from his gardens in Weimar and from the plants he discovered in Italy. Though lacking in experience and formal education in botany, Goethe’s intuitive insight empowered him to pursue this line of inquiry analytically, develop the empirical evidence necessary to build an argument, and eventually discover, at least in part, the reality behind his intuition. Though Goethe was finally forced to abandon his initial notion of an *Urpflanze* as such (that is, both in the sense that there is a static, essential plant archetype that exemplifies the foundation of plant growth and variation and in the sense of there existing in the world an actual common plant ancestor) he did go so far as to begin comprehension of plant metamorphosis and even coined the term *Morphologie*. Though the result of Goethe’s inquiry into plant morphology was only loosely supportive of his initial hypothesis and visualization of the *Urpflanze*, his grand, essential vision of the primal plant led him to a genuine contribution to the field of botany in his day. His original vision of the possibility of relations between plant species allowed Goethe to pursue a unique avenue of inquiry and contribute to the field. This vision differs from the standard form of a scientific

hypothesis, however, in that there is a unique visual model or concept that Goethe is applying to plant life, not just an educated guess at the expected result of an experiment. Starting from this visual insight into the possible nature of an organism by means of a basic, ancestral plant form, Goethe pursues a line of inquiry by observing phenomena and acquiring evidence that either supports or denies his intuition.

In order to further characterize and identify the function of Goethean *anschauende Urteilskraft* and its relation to the poet's texts and larger ambitions, let us briefly return to the texts of the *Italienische Reise* and the early scientific works and proceed to a discussion of Goethe's philosophical preoccupations. As we have already seen, Goethe makes reference to the botanical and scientific speculations running through his mind during his journey time and again throughout the text of *Italienische Reise*. In regard to natural science, Goethe is mainly concerned with plant classification and morphology throughout the text, although he also makes quite a few geological, meteorological, and sociological speculations. Goethe's observations within the *Reise* are generally paired with speculative reasoning to supplement his data and lend it significance beyond that which the bare facts can reveal; one rather simple example of this is Goethe's conjecture in the *Reise* that the ash of Mt. Vesuvius remained in the air for quite a while before being carried by the wind to reach and blanket Pompeii, thus explaining why so many people did not flee and were killed (*IR* March 11, 1787). The ash would have taken quite a while to reach Pompeii even if it were visible, but the bodies found were, of course, often found in their homes without any sign of having tried to flee the city. This was mere speculation and intuition on Goethe's part as far as

the text suggests, but this theory is similar to what is recorded to be the actual chain of events. Likewise, Goethe's search for the *Urpflanze* is a prime example of Goethe's use of *anschauende Urteilskraft* in his science. The tendency to complement fact with intuition and logical speculation is clearly seen in the work of most important scientific and scholarly contributions, so the question must be raised as to how Goethe's brand of scientific intuition is any more peculiar than that of other scholars or scientists. Given that Goethe's observational botany has long been outdated by genetic and chemical methods of analysis, the historical or scientific contribution remains in question and will be addressed in the following section.

### ***Naturphilosophie* and Spinozistic Unity in Nature**

One of the premises of Richards' *The Romantic Conception of Life* is that Goethe's scientific thought shares many characteristics with the philosophical movement of *Naturphilosophie* during the Romantic period. Although Richards maintains that this movement was championed by Hegel, Schelling and Fichte, he also claims both Goethe and Kant as predecessors to the *Naturphilosophen*. Richards characterizes this movement by its concern with archetypes either expressed as part of a transcendent reality or, as in the case of Goethe, it "explained the appearance of archetypal variations in nature as a consequence of gradual development, or evolution, which instantiated the ideal forms" (10). Goethe, similar to Schelling and Kant, regarded the natural world as "a harmoniously unified network of integrally related parts," which found some of its fundamental patterns for creation in biological archetypes (10). One may find evidence

of this both in the Tobler essay on *Natur* and in the morphological notion that the leaf is the common ancestor of other plant organs. Although the *Naturphilosophen* clearly had similar goals in their investigation of *Natur*, the question of the character of archetype and its relation to Nature is not uniformly treated within the movement. Whereas Kant for example would only employ archetypes (i.e. the categories of Newtonian Science) to nature heuristically or *als ob* due to the Kantian rift between subject and object, Goethe held that nature was intrinsically archetypal, as one can detect in his pursuit for both the *Zwischenkieferknochen* and the *Urpflanze*.

Furthermore, Richards argues that Goethe and the *Naturphilosophen* heralded the Spinozistic slogan, *Deus sive natura* (“God or Nature”), which conceived of nature in organic as opposed to mechanistic terms. Nature was conceived as the creator of itself, starting from simplistic organization and diversifying into a more complex organization of natural entities and organisms. Like Spinoza, Goethe elevated nature to the status of what King refers to as a “pantheistic goddess” (239). Richards claims that Goethe might be referred to as “the Spinoza of science” (376) and Yourgrau would seem to agree (69); given Goethe’s own references and interest in Spinoza, such a qualification is not without reason, exaggerated though it may be. Even if one is not prepared to accept Richards’ enthusiastic identification of Goethe as a Spinozist, Goethe’s interest in and philosophical similarity to Spinoza’s pantheistic view of nature is difficult to deny. Goethe’s essay, „*Studie nach Spinoza*“, is a clear example of his philosophical and scientific relationship to the 17<sup>th</sup> century pantheist. Here, the author affirms his belief that the infinite cannot be thought of in terms of parts, and yet man is unable to truly

conceive of the Unending except as an idea. Neither can man think of this infinity as having parts, as all finite things are elements of the infinite and are „*unzertrennlich vom Ganzen*“ (*Goethes Werke* XIII 8). Though the probability of Goethe’s conceptual connection to Spinoza are outside the scope of the current project—which by and large seeks to elucidate the conceptual development of Goethe’s botanical studies in the *Italienische Reise* and associated texts—this essential unity of the parts to the whole in Nature is suspiciously similar to Spinoza’s identification of the entirety of the natural universe with God, and may be taken into consideration when deliberating upon Goethe’s fundamental metaphysical viewpoint.

Wilkinson and Willoughby do not deliberately liken Goethe to the *Naturphilosophen* or to Spinoza, but they do remark that Goethe anticipated the evolutionists and that he viewed “the whole of creation as an ascending ladder of existence, of which man is the highest point, [and whereupon] nature [becomes] conscious of itself” (11). The distinctions between organisms come into existence from variations upon common, originating qualities, “hence mind and matter are not mutually exclusive opposites, but different aspects of one and the same thing”—namely, Nature (11). Wilkinson’s emphasis on the lack of distinction between mind and matter due to the circumstance of their shared natural origin—which clearly renders idealistic dualisms untenable in Goethe’s view—speaks to Richards’ characterization of Goethe as one who seeks principles throughout nature which unify or render it intelligible. Wilkinson’s depiction, however, clearly carries Goethe’s quest to discover unification in

nature a step further by propelling the discussion beyond Archetype and into a more philosophical realm where questions of idealism and dualism are inevitable.

Goethe's correlation with the precepts of the *Naturphilosophen* extends beyond the notion of archetypal variation in Nature, though. Whereas this chapter has sought to expound upon the ideological and philosophical foundation of Goethe's scientific work during the period of the Italian Journey, the next chapter will unite these themes and foundations to Goethe's broad project, not only as an amateur botanist, but also as a thinker and as an artist. This will be done in an effort to conclude the project by demonstrating the significance of Goethe's viewpoint on Nature and the Primal Plant to Goethe studies at large.



## CHAPTER V

## CONCLUSION: GOETHE'S BOTANY AS "ROMANTIC BIOLOGY"

In his study on the subject of science during the *Goethezeit*, Richards uses the moniker "Romantic biologists" to categorize certain of the *Naturphilosophen* due to their tendency to consider "the activities of the scientist comparable to that of the artist, for both employed creative imagination" (12). Whereas Richards discusses his characterization of a number of thinkers as Romantic biologists in some detail, I will attempt to conclude the current project by explaining how Goethe may be understood as practicing this so-called Romantic biology specifically during the period of the Italian Journey and thus begin to elucidate the connection in Goethe's thought between *Kunst* and *Natur* during this time. The connection between Goethe's scientific activities and his literary pursuits are superficially clear in his poetry on Nature, especially »*Metamorphose der Tiere*« and »*Die Metamorphose der Pflanzen*« (a poem which partially shares its title with the 1790 essay on the same subject). Although these and others of Goethe's nature poems serve as examples of the poet's attempt to develop his view of Unity and the *Urbild* in Nature in an expressive, personal manner rather than analytically, the clearest theoretical connection between *Kunst* and *Natur* for Goethe is to be found in his recorded philosophical musings and his methodology. In the last chapter, I discussed Goethe's propensity to utilize *anschauende Urteilskraft* to devise his theories on the nature of the physical world and of biological organisms in particular. This visual, intuitive, aesthetic perception of the objects of scientific inquiry helps the

scientist to theorize about the principles that govern the existence of phenomena and the causal connections between such natural phenomena. I will take this concept in Goethe's science as a starting point for an extension of the idea that Goethe's science and his artistic predisposition are interdependent. In limiting the scope of the remainder of this project to include only this connection to Goethe's creative and aesthetic sensibilities in the *Italienische Reise* and the associated scientific projects (rather than exceeding the purview of this project by including a discussion of Goethe's Nature poetry), I hope to provide a launch pad for other students of Goethe to draw conceptual connections between Goethe's career-spanning scientific works and his poetry or fiction. It is not within the scope of this project to determine how Goethe's vision of *Natur* is utilized in his literary corpus—only to inquire as to the nature of said vision during the Journey, which, as I will maintain, is essentially aesthetic and visual.

I would like to begin pointing out this fluidity between *Kunst* and *Natur* by citing the palpable example of Goethe's acute interest in drawing prior to and during the Italian Journey. As mentioned, Goethe's studies with Loder began with Goethe studying anatomy in an effort to reproduce the human form in an anatomically correct manner. These studies quickly turned into keen scientific interest which sparked Goethe's imagination and, after studying many human and animal skulls, compelled him to theorize about the presence of an intermaxillary bone in man—a principle connection between man and other mammals. Goethe's visual and aesthetic investigation of man's anatomical features sparked his imagination to speculate as to why man would not share a quality that most other mammals possess. Moreover, during the Journey, Goethe made

copious drawings of the Italian countryside and his surroundings while commenting on such things as the causes of geological phenomena. This is important insofar as it begins to reveal the connection between visual arts and science for Goethe. In this case, we see that Goethe's artistic sensitivity and imagination invited him to explore Nature in a more systematic and theoretical way.

When I speak of aesthetics and *Kunst* in connection with Goethe's science, I do not refer only to the philosophy of art or the study of the beautiful, but also the study of the so-called "lower" faculties (as opposed to the higher faculties of reason and understanding) which are the conditions for the possibility of meaningful art and simply of making perceptual sense of the world; in particular, these conditions include the senses, intuition, and imagination. Kant understood aesthetics as the study of artistic taste and held in his *Critique of Judgment* that taste does not appeal to a concept and is therefore non-rational and subjective. While Goethe would likely agree that taste is non-rational, I believe his estimation of the aesthetic realm differs from the task of defining taste or the qualities and contemplation of the beautiful object inasmuch as he attempts to grasp how the mind detects and fashions meaning, particularly within the context of creative, artistic vision, as I will attempt to demonstrate shortly.

Goethe's epistemological interest was with the subject as an emotional, prejudiced creature with atrophied senses which is still capable of apprehending the universe with some degree of truth and accuracy. Indeed, knowledge and objective understanding cannot be had without an understanding of the subject with all his feelings, desires, predilections, and prejudices. According to Wilkinson, Goethe's view

is that all ideas, even those reaching the highest level of abstraction, are intimately bound to sense experience and man's perception of the natural world (137).

Additionally, Yourgrau holds that Goethe interpreted the word German *Idee* to have the meaning of its Greek root *eidos*, or "image," which underscores the connection between sensation and thought (78). Wilkinson argues that in the decade of 1770-1780,

we find [Goethe] learning through the practice of his art, certain fundamental truths by which he was to live—and think—for the rest of his life: that art is a fusion of the most earthy and the most spiritual; that the artist is one who sees the universal in the particular, the ideal in the real, who endows external objects with a life from within and tells of his inner world in terms of the outer, so that in seeming to speak only of himself he yet symbolizes the secret life of us all. (138)

Taken in this light, the relation between Goethe's aesthetic thought and his scientific theories and observations starts to become apparent; both as an artist and as a scientist, Goethe strove to come to a holistic understanding of the relationships between specific observations and their place and significance in the natural world at large. For Goethe, the main function of artistic perception is to decipher the underlying significance and causal connections behind sensation and his scientific theory of the *Urpflanze* did just that by making ontological claims about the fundamental nature of the plant which beg implications concerning one's understanding of nature at large.

Among the thinkers to which Goethe has been compared in this study, Wilkinson's comparison of Goethe to Kant is among the most defensible due to the

sheer number of shared philosophical questions and concepts. However, unlike Kant, Goethe blurs the distinction between subject and object in light of his belief in Oneness in all things. Goethe and Kant also differ in regard to the goals of their aesthetic studies, though they may be seen to share some of the same themes. In his middle and later years of writing, Goethe was every bit as much of a naturalist as he was a poet, although Goethe's scientific writings are, in a way, in service of his aesthetic worldview as I have mentioned.

For this reason, it may be of assistance to address some of the aesthetic terminology that Goethe used in order to draw further connections between aesthetic and scientific perception in his view. Goethe held that all art could be judged by the relationships and interplay between the various aspects of any particular artwork. What Wilkinson translates as "outer form" in the English edition of her book is *Gestalt* in Goethe's own words (176). In the most basic sense, *Gestalt* is translated into English as "shape," but this translation and that of Wilkinson do not do full justice to Goethe's intentions. The best translations for this word would be "form," "arrangement," or "composition" depending on the circumstances and these somewhat more accurate translations apply to the visual arts every bit as much as to music and literature. Wilkinson proclaims that

Form, whether thought of as process or product, is, like the philosopher's stone, at once the vessel, the material and the treatment; it is the whole mysterious operation whereby what is unorganized becomes organized into a new creation. [...] Only by accepting the conditions and

conventions of his medium, can an artist bring forth a symbol of the universal instead of the pallid fragment which ensues when he tries to emulate the freedom of nature. (141)

The *Gestalt* stratifies and presents the import of the artwork and is composed of the fundamental sense qualities that are arranged so as to bring about compounding qualities and ever-increasing levels of significance (Stephenson 59, Wilkinson 180). This import and significance is the *Gehalt*. As implied, it is the meaning or the message that is alive in the artist and the percipient which is conveyed by the *Gestalt* and the aforesaid *Stoff* (Stephenson 51). *Gestalt* and *Gehalt* are dependent upon one another for their pertinence in an artwork and, if the marriage of the two is properly accomplished by the artist, the individual work of art may surpass the artist's original vision inasmuch as it fashions nature anew as opposed to mimicking the observable world and thereby limiting the scope of the work. Said differently, the freedom and infinite complexity of nature is present in the artwork insofar as it has made its own original, microcosmic natural order. The image is not the container of the essence, but is rather a part of the meaning or content in itself. The work of art should reflect reality by being conscious of the fact that the one, the timeless, the unchanging, and the universal are reflected only in the many, the changing, the particular, and the individual. By accepting the conditions of the sensual world in artistic representation, we may experience the oneness and the freedom of nature (Stephenson 54).

*Gestalt* represents *Gehalt* in such a way that one cannot help but think of a work of art as a creation of the natural world itself. The work is free from rationalization,

incapable of being translated into discursive language, and it does not take on the intellectual motives or agenda of the artist. It is, in itself, a force of nature. As in Kant's system, sense and psychological laws do not exist in opposition to nature, but in coordination with it by means of the mind's reality-creating faculties (sense, understanding, concepts). Goethe takes this coordination a step further, however, in his hypothesis that the mind is a product of nature which took form by its interaction with the natural world—another proto-Darwinian concept in Goethe's thought, along with the theory of the *Urpflanze* and his discovery of the human intermaxillary bone.

*Gestalt* and *Gehalt* are not simply artistic terminology, however; they apply to the perception of the world by the lower faculties. Our fundamental understanding of the world is constructed by memory, sense, feeling, and imagination—i.e. the same psychological and perceptual faculties of the aesthetic realm. In our understanding of the natural world, *Gestalt* is the pure image of the world as it is presented to our senses while *Gehalt* may be understood as the ideas and the interconnectedness we draw from these sensate and mnemonic images. The upshot is that Goethe's aesthetic view has applicability not only to art—it also attempts to describe the very means by which human beings come to understand the world scientifically and in the everyday sense. Seen through Goethe's eyes, it would seem, the study of intuition and artistic vision should not be an obscure, impractical endeavor suited only to aesthetes—Goethe's intrinsic argument is that the lower faculties of memory, sensation, and emotion, which are traditionally considered to be the territory of aesthetes, are actually fluid with the study of the rational faculties in epistemology and philosophy proper. Goethe's

understanding of *Gehalt* and *Gestalt* would seem to be part and parcel of his somewhat elusive notion of *anschauende Urteilskraft* inasmuch as both involve man's means of intuiting the laws and archetypes that are latent in the natural world that inspires sense experience.

The function of this comparison between Goethe's science and art is to demonstrate how Goethe aspired to a meaning-centered scientific outlook that furthered his understanding of the world and nature in a general and all-encompassing way. By way of the *Urpflanze*, Goethe sought the basic rules and principles upon which infinite diversity could spring forth from the kind of structured, cognizable natural world that would allow one to conceive of a biological taxonomy of plant life in the first place. He did not seek endurance of hereditary traits among plants in the Darwinian sense or an idealistic essence of plant life in the Platonic sense, but a logical, archetypal point of reference and a comparative framework for understanding diverse characteristics in plants. This archetype is not a Platonic essence because it does not rely on any sort of dualism for its reality and the source of structure is inherent in the matter itself—matter and structure are united into one for Goethe. Goethe's comparative biological studies show structure and unity within an infinitely complex universe with innumerable permutations based on fixed, archetypal patterns. Meanwhile, his attention to the fundamental importance of the “lower” faculties and artistic modes of thought to epistemology helps to illuminate the essentiality of human imagination and visionary ingenuity to scientific understanding.



Goethe's characteristic defense of the "rights of nature" is a prime example of Goethe's trust in the preeminence of *Natur* in the intelligible universe and its extension into all facets of life and being, as I have tried to explicate throughout this project (Richards 404-5, 422). Goethe's ongoing effort to place *Natur* at the center of his scientific and artistic metaphysics brings us to the ultimate import and conclusions of the current study. I maintain that this connection between *Kunst* and *Natur* in Goethe's thought testifies to the import of the Italian Journey as a period during which Goethe began to devise his metaphysical vision of *Natur* in force, not only as a conception which helped to spark his natural scientific theories and projects, but also as a conception with far-reaching consequences to Goethe's artistic vision and philosophical conception of man. The *Italienische Reise* is a testimony to Goethe's natural scientific progress during this time due to its record of the development of his conceptualization of the *Urpflanze* from an essential model that might be found in reality, to a guidepost for attempting to track plant metamorphosis and the common, archetypal and morphological links between all plants. This was made possible by Goethe's so-called "Romantic biology"—that is, his visual, creative, intuitive method of science which extended throughout his scientific works. It is my hope that students of Goethe and of Romantic period literature will find this study useful as a foundation for further research into Goethe's philosophical and scientific vision of *Natur* as represented in Goethe's poetry and drama, particularly in his Nature poetry.

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